Allen-Bradley

Technical Data

POINT I/O

1734 Series

42003

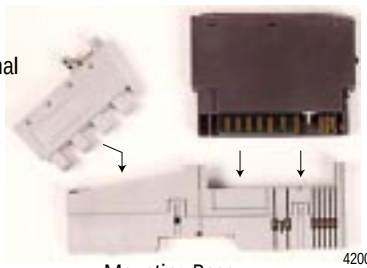
About POINT I/O

POINT I/O™ is a family of modular input/output modules. This solution allows you to precisely specify the right amount of I/O for your application needs, thus increasing your flexibility and reducing installation costs.

The POINT I/O system is ideal for industries where flexibility and low cost-of-ownership are key to successful control system design and operation.

How the POINT I/O System Works

The POINT I/O modules and Removable Terminal Blocks (RTBs) operate independently allowing for simplified installation and commissioning. The latching device on the Removable Terminal Blocks (RTBs) keeps the I/O assembly into place as indicated by the audible “click” sound.



42002

For a detailed description of each of these components, refer to the table on page 3.

POINT I/O Features and Benefits

- Just-what-you-need granularity reduces system size and cost.
- Network options provide a variety of control system solutions.
- Bidirectional bus interconnect system improves reliable power and communication pass-through.
- DIN-rail disconnect system allows you to vertically remove components without interrupting adjacent components.
- Mechanical keying for field-side protection allows you to prevent incorrect module insertion into a preconfigured terminal base.
- Electronic module ID allows for system-side protection.
- Remove cartridge and terminations independently without interrupting communications on the network.
- Light-gray terminals facilitate visual inspection and verification.
- You can pre-assemble the system and then mount it as a unit on the DIN-rail.
- Removable termination facilitates system installation, commissioning, and maintenance.
- You can mount the system vertically or horizontally, allowing for "real-world" installation.

What this Product Data Contains

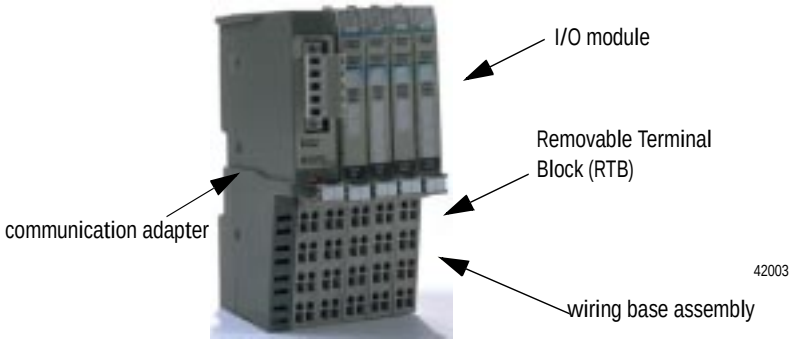
Use the following table to find product information in this document.

For Information On	Description	See Page
POINT I/O System	Overview of the POINT I/O System	3
Communication Adapter	DeviceNet Adapter (Cat. No. 1734-ADN)	12
Communication Interface	DeviceNet Interface (Cat. No. 1734-PDN)	14
Communication Adapter	PROFIBUS Adapter (Cat. No. 1734-APB)	15
1734D Series	1734D Series 24V dc 8 In/8 Out Combo Module (Cat. No. 1734D-IB8XOB8E, -IB8XOB8ES)	17
	1734D Series 24V dc 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IB8XOW8, -IB8XOW8S)	19
	1734D Series 120V ac 8 In/8 Out Combo Module (Cat. No. 1734D-IA8XOA8, -IA8XOA8S)	21
	1734D Series 120V ac 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IA8XOW8, -IA8XOW8S)	23
Wiring Base Assemblies	The mounting base (1734-MB) and Removable Terminal Blocks (1734-RTB or -RTBS) are sold together as wiring assemblies under the catalog number 1734-TB (screw clamp terminations) and 1734-TBS (spring clamp terminations).	26
	Wiring Base Assembly with 12 Screw-Clamp or Spring-Clamp Removable Terminal Blocks (Cat Nos. 1734-TB3, -TB3S)	27
AC Modules	120V ac 2 Input Module (Cat. No. 1734-IA2)	29
	120/220V ac 2 Output Module (Cat. No. 1734-OA2)	30
	220V ac 2 Input Module (Cat. No. 1734-IM2)	31

DC Modules	24V dc 2 Input Sink Module (Cat. No. 1734-IB2)	33
	24V dc 4 Input Sink Module (Cat. No. 1734-IB4)	34
	24V dc 2 Input Source Module (Cat. No. 1734-IV2)	35
	24V dc 4 Input Source Module (Cat. No. 1734-IV4)	36
	24V dc Electronically Protected 2 Point Output Module (Cat. No. 1734-OB2E)	37
	24V dc Electronically Protected 4 Point Output Module (Cat. No. 1734-0B4E)	38
Analog Modules	24V dc Analog 2 Current Input Module (Cat. No. 1734-IE2C/B)	40
	24Vdc Analog 2 Current Output Module (Cat. No. 1734-OE2C/B)	41
Counter Modules	24V Encoder/Counter Module (Cat. No. 1734-IK)	43
	5V Encoder/Counter Module (Cat. No. 1734-IJ)	44
	24V dc Very High Speed Counter Module (Cat. No. 1734-VHSC24)	45
	5V dc Very High Speed Counter Module (Cat. No. 1734-VHSC5)	47
Relay Module	24V dc, 120V ac, and 240V ac 2 Relay Sink/Source Output Module (Cat. No. 1734-OW2)	49
Field Power Distributor	Field Power Distributor (Cat. No. 1734-FPD)	52
Expansion Power Supply	24V dc Expansion Power Supply (Cat. No. 1734-EP24DC)	55
Related Publications and Mounting Dimensions	Related Publications and Mounting Dimensions	56

Understanding the System Design

The POINT I/O system consists of four main components.

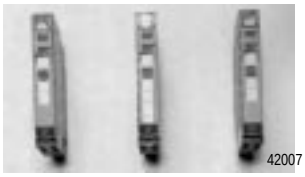


For Information On	See Page
• Communication Interfaces	4
• Mounting Bases	6

41973

42005

- Wiring Assembly with Removable Terminal Blocks (RTBs) 6



- I/O Modules 7

The POINT I/O system also has an optional component.

For Information On	See Page
• Expansion Power Unit	9

- Field Power Distributor 8

Communication Interfaces

POINT I/O communication interfaces provide the interface between a fieldbus network and the POINT I/O backplane (PointBus™). POINT I/O has three classes of fieldbus interfaces: an adapter (1734-ADN), a low-cost communication interface (1734-PDN), and an interface with integrated I/O (1734D Series).

POINT I/O modules attach to the DeviceNet network using round media. Each adapter interfaces the POINT I/O backplane with the DeviceNet network and supplies 5V logic power to the I/O modules.

Refer to the sections on the 1734-EP24DC expansion power unit and 1734-FPD field potential distributor for more information on how they expand the backplane to support up to 64 modules.

42009

- a DeviceNet adapter (1734-ADN)

  The 1734-ADN DeviceNet adapter collects I/O data from up to 64 modules via the I/O backplane. This data is presented to the scanner module located on the DeviceNet network allowing the I/O modules to appear on DeviceNet as one node, requiring only one DeviceNet node address. The 1734-ADN provides an isolated dc/dc converter between field 24V dc and PointBus 5V.

  You can connect up to 12 modules to each 1734-ADN (with a maximum of 10A of field power) before using the integrated, isolated 24V dc expansion power unit (refer to the 1734-EPDC24 section on page 9) to provide expansion power to both digital and analog modules.

41973

- a low-cost communication interface (1734-PDN)

  This low-cost DeviceNet interface is not seen as a node on the DeviceNet network, yet each module attached to this adapter is viewed as a separate node. The backplane power is derived from the DeviceNet network and is not isolated.

  You can connect up to 12 modules to each 1734-PDN with a maximum of 10A of field power. Refer to the 1734-FPD section on page 8 for logical and partitioning examples.

42057

- an interface with integrated I/O (1734D Series)

  The 1734D Series functions as a 1734-PDN adapter, but can communicate on the network as a module since it also contains I/O. For this reason, the POINT Block Family of Products is seen as a non-isolated node on the DeviceNet network and each module attached to this adapter is viewed as a separate node.

TIP

You will need to address I/O modules used with the 1734-PDN and the 1734D Series interfaces as individual nodes on the DeviceNet network. You can do this by using Sequential Auto Addressing (SAA) or node commissioning. For a brief description, see page 11. For more detailed information, refer to the POINT I/O User Manual, publication 1734-UM001A-EN-P.

Mounting Base

42005

The POINT I/O system follows a “No Tools” design approach. The mounting base (1734-MB), I/O module, and Removable Terminal Block (1734-RTB) may be assembled as a system without tools. The POINT I/O mounting base, following this “No Tools” model, mounts directly on the DIN-rail either vertically or horizontally.

The mounting base provides the mounting locations for the I/O modules and the Removable Terminal Blocks (RTBs). The mounting base also forms the interconnect for the I/O backplane communication and field power distribution.

Additional features of the mounting base include:

- 60µ–in gold-plated, card-edge contacts for long-term reliability
- DIN-rail mount/lock/unlock - color-coded on the top and bottom
- bidirectional bus interface creates a reliable connection
- field power and chassis ground (via DIN rail) interconnect
- mechanical keying prevents incorrect module placement
- color-coded mechanical features for visual inspection

Removable Terminal Blocks (RTB)

42053

The Removable Terminal Blocks (RTBs) provide eight or twelve separate terminal locations for you to connect field wiring. They also provide you with vertical access to wire and screw terminations. Each terminal is numbered and a separate terminal point is provided for each wire, including a shield ground terminal point for 2-point analog modules.

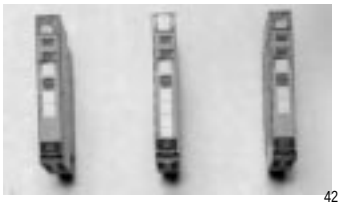
The RTB also follows the “No Tools” design approach. Once the RTB is wired properly, you never need to touch the screws. These RTBs separate independently of the base and I/O module to facilitate rapid installation and commissioning of the system, whether it’s one loop or one sub-system at a time. You can pivot the RTB into place or insert it vertically.

Each terminal is numbered on the bottom of the RTB to simplify troubleshooting during commissioning or maintenance cycles.

42006

TIP

The mounting base (1734-MB) and Removable Terminal Blocks (1734-RTB or -RTBS) are sold together under the catalog number 1734-TB or -TB3 (screw clamp terminations) and 1734-TBS or -TB3S (spring clamp terminations).


42007

I/O Modules

POINT I/O modules convert field device signals into control status indicators. To facilitate installation, commissioning, and maintenance, you can Remove and Insert Under Power (RIUP).

ATTENTION

Remove field-side power before removing or inserting modules. Modules are designed so you can remove and insert them under backplane power. When you remove or insert a module while field-side power is applied, you may cause an electrical arc. An electrical arc can cause personal injury or property damage because it may:

- send an erroneous signal to your system's field devices causing unintended machine motion
- cause an explosion in a hazardous environment

Repeated electrical arcing causes excessive wear to the contacts on both the module and its mating connector. Worn contacts may create electrical resistance.

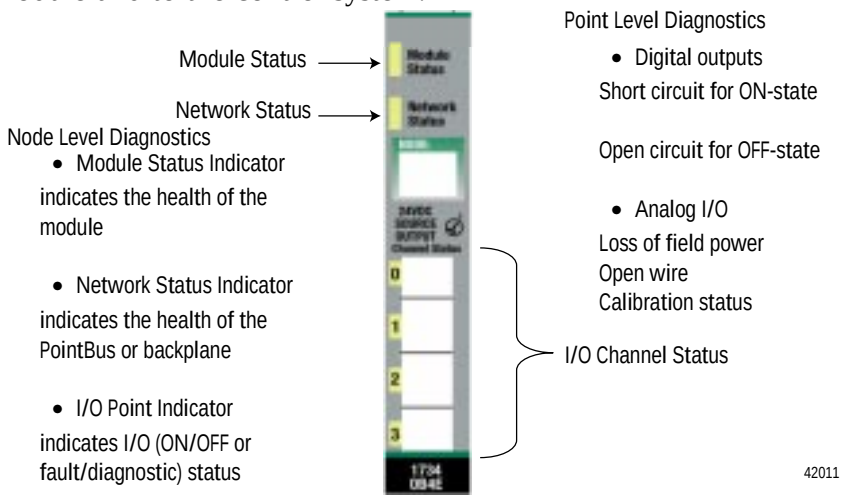
POINT I/O modules provide a variety of LED indicators:

- module status
- network status
- power indication
- calibration status
- I/O point status (ON/OFF/fault or diagnostic)

Refer to each module's product page later in this document for detailed information.

About the POINT I/O Modules' Diagnostics

All status and diagnostic information (strobed, polled, cyclic, or change-of-state) is reported back over the network communication adapter. A single point of failure is detected and reported at the module and to the control system.



Power Supplies and Power Distribution

Power units may be divided into three categories:

- Power Supply

  The power supply transforms and/or rectifies one field voltage level to a different field voltage level.

- Field Power Distributor

  The field power distributor allows you to convert your field power so that you may have a broad range of voltage inputs in your 12 module system. This range of voltage inputs includes 5V dc to 250V dc and/or 24V ac to 240V ac applications and I/O modules.

- Expansion Power Unit

  The expansion power unit provides an additional +5V backplane power so you can add up to 12 more modules to your system. This power unit continues to pass data communication to the modules you add to your system.

Power Supply

The 1794-PS13 power supply from the FLEX I/O family of products may be used with POINT I/O to supply 24V dc to the 1734-FPD field power distributor.

42012

Field Power Distributor

The 1734-FPD field power distributor passes through all POINT I/O backplane signals, but does not provide additional backplane power. The field power distributor gives you the ability to change the field power distribution source for I/O modules to the right of the 1734-FPD field power distributor. This facilitates logical or functional partitioning of low-channel count, high I/O-mix applications using the 1734-PDN and 1734D Series communication interfaces.

You can use the 1734-FPD field power distributor with a broad range of voltage inputs including 5V dc to 250V dc and/or 24V ac to 240V ac applications and I/O modules.

42008

Expansion Power Unit

The 1734-EP24DC expansion power unit passes 24V dc field power to the I/O modules to the right of it. This unit extends the backplane bus power and creates a new field voltage partition segment for driving field devices for up to 12 I/O modules. The expansion power unit separates field power from I/O modules to the left of the unit, effectively providing functional and logical partitioning for:

- separates field power between input and output modules
- separating field power to the analog and digital modules
- grouping modules to perform a specific task or function
- dark-gray color for easy visual inspection and identification

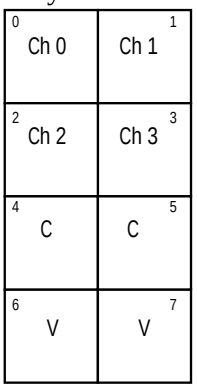
You can use multiple expansion power units with the 1734-ADN adapter to assemble a full system. For instance, if you are using the 1734-ADN adapter, you may use a 1734-EP24DC expansion power unit to add additional modules in 12 module increments. For example, if you had a 36 module system with a 1734-ADN adapter, you would have two 1734-EP24DC expansion power units to provide more PointBus current for modules to the right of the supply.

ATTENTION

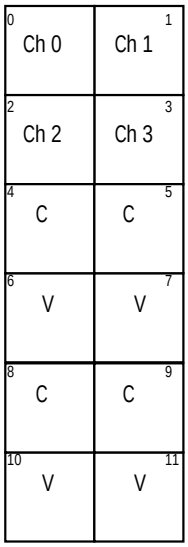
You can only use the 1734-EP24DC expansion power unit with the 1734-ADN adapter.

Wiring POINT I/O Modules to the Terminal Base Unit

The 1734-TB and -TBS terminal base units provide one location for every wire you need to connect to a two-POINT module. The 1734-TB3 and -TB3S terminal base units provide a location for every wire you need to connect a three-point module



41975



42696

Terminal Number				Module Termination Function														
	IA2	OA2	IM2	IB2	IB4	IV2	IV4	OB2E	OB4E	IE2C	OE2C	IK	IJ	VHSC24		VHSC5		OW2[1]
														Mod 1	Mod 2	Mod 1	Mod 2	
0	In 0	Out 0	In 0	In 0	In 0	In 0	In 0	Out 0	Out 0	In 0	Out 0	A	A	A	Chas Gnd	A	Chas Gnd	Out 0 A
1	In 1	Out 1	In 1	In 1	In 1	In 1	In 1	Out 1	Out 1	In 1	Out 1	A_{ret}	A_{ret}	A_{ret}	Chas Gnd	A_{ret}	Chas Gnd	Out 1 A
2	NC	NC	NC	NC	In 2	NC	In 2	Out 0	Out 2	Chass Gnd	Chass Gnd	B	B	B	Ret 0	B	Ret 0	Out 0 B
3	NC	NC	NC	NC	In 3	NC	In 3	Out 1	Out 3	Chass Gnd	Chass Gnd	B_{ret}	B_{ret}	B_{ret}	Ret 1	B_{ret}	Ret 1	Out 1 B
4	L2/N	L2/N	L2/N	C	C	C	C	C	C	C	C	Z	Z	Z	$-V_{aux}$	Z	$-V_{aux}$	C or L2/N
5	L2/N	L2/N	L2/N	C	C	C	C	C	C	C	C	Z_{ret}	Z_{ret}	Z_{ret}	$-V_{aux}$	Z_{ret}	$-V_{aux}$	C or L2/N
6	L1	L1	L1	V	V	V	V	V	C	V	V	Chass Gnd	Chass Gnd	Out 0	$+V_{aux}$	Out 0	$+V_{aux}$	V or L1
7	L1	L1	L1	V	V	V	V	V	C	V	V	Chass Gnd	Chass Gnd	Out 1	$+V_{aux}$	Out 1	$+V_{aux}$	V or L1

1 Relay contacts are not connected to the field power bus.

V = 24V dc = Supply C = Common = DC Return NC = No Connection Chass Gnd = Chassis Ground L1 = AC Power L2/N = AC Return/Neutral A_{ret}, B_{ret}, and C_{ret} = Inputs $-V_{aux}$ and $+V_{aux}$ = Auxiliary Supply

Configuring POINT I/O Modules

Configuring POINT I/O modules is as easy as POINT and click. RSNetWorx™ allows you to simply ID the network and configure the I/O modules with easy-to-use Electronic Data Sheet (EDS) files - just POINT to the field and click on your selection.

To obtain EDS files for use in configuration, go to:
http://www.ab.com/networks/eds

Use the following table to determine which communication interface will meet your application needs.

Interface	Purpose	See Page
1734-ADN	DeviceNet Adapter (Cat. No. 1734-ADN)	12
1734-PDN	DeviceNet Interface (Cat. No. 1734-PDN)	14
1734-APB	PROFIBUS Adapter (Cat. No. 1734-APB)	15
1734D-IB8XOB8E, -IB8XOB8ES	1734D Series 24V dc 8 In/8 Out Combo Module (Cat. No. 1734D-IB8XOB8E, -IB8XOB8ES)	17
1734D-IB8XOW8, -IB8XOW8S	1734D Series 24V dc 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IB8XOW8, -IB8XOW8S)	19
1734D-IA8XOA8, -IA8XOA8S	1734D Series 120V ac 8 In/8 Out Combo Module (Cat. No. 1734D-IA8XOA8, -IA8XOA8S)	21
1734D-IA8XOW8, -IA8XOW8S	1734D Series 120V ac 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IA8XOW8, -IA8XOW8S)	23

Understanding Sequential Auto Addressing (SAA) and Node Commissioning

When using I/O modules with the 1734-ADN, 1734-PDN, and the 1734D Series interfaces, you will need to address the modules as individual nodes on the DeviceNet network. You can do this by using:

- Node Commissioning

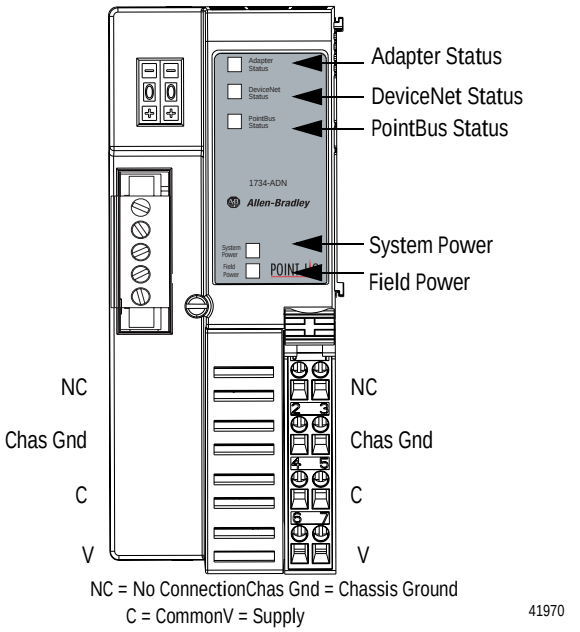
  Node commissioning allows you to assign the node address for individual devices. This is done one device at a time.

- Sequential Auto Addressing (SAA)

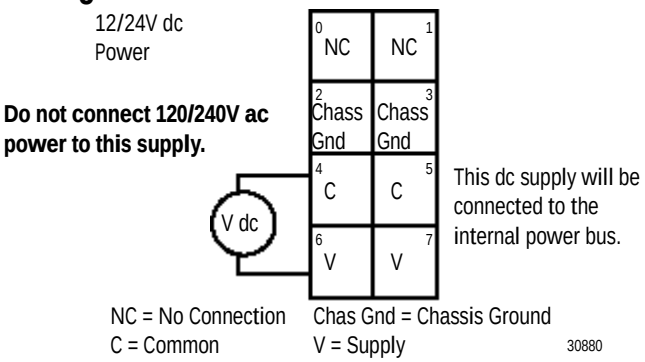
  Sequential Auto Addressing allows you to commission multiple nodes at one time. Used in conjunction with EDS files, you assign the first node with a node address and the SAA function will automatically assign node addresses to the remaining nodes.

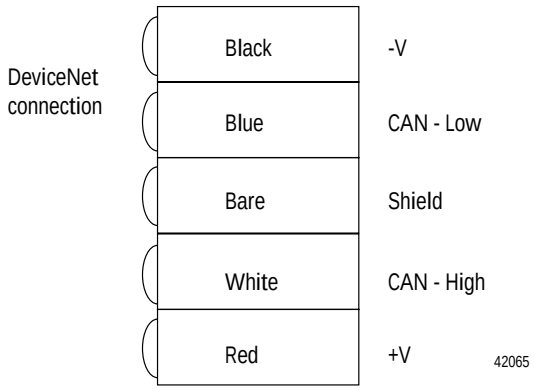
  For more information, refer to the POINT I/O User Manual, publication 1734-UM001A-EN-P.

1734-ADN DeviceNet Adapter



Wiring



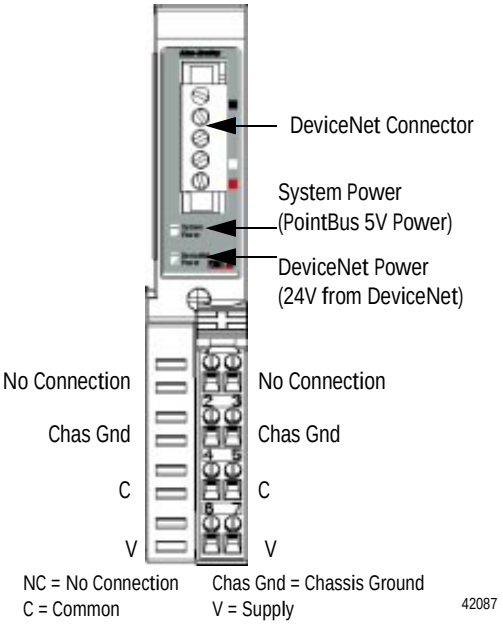


Specifications - 1734-ADN DeviceNet Adapter Module	
Communication Interface Specifications	
Expansion I/O Capacity	12 modules (Note: Total expansion up to 63 modules - 12 modules with 1734-ADN - add 1734-EP24DC modules for additional 12 modules for each additional EP24 up to 63 module maximum)
DeviceNet Communication Rate	125K bit/s (500m maximum) 250K bit/s (250m maximum) 500K bit/s (100m maximum)
DeviceNet Cable	Allen-Bradley part number 1485C-P1-Cxxx Refer to publication DN-2.5 for more information
Module Location	Starter module - left side of 1734 system
DeviceNet Power Specifications	
Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.
Input Voltage Rating	24V dc nominal
DeviceNet Input Voltage Range	11-25V dc DeviceNet specification
Input Overvoltage Protection	Reverse polarity protected
DeviceNet Power Requirements	24V dc (+4% = 25V dc max) @ 30mA maximum
Power Supply Specifications	
Power Supply	**Note:** In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.
Input Voltage Rating	24V dc nominal 10-28.8V dc range
Field Side Power Requirements	24V dc (+20% = 28.8V dc maximum) @ 400mA maximum
Inrush Current	6A maximum for 10ms
PointBus Output Current	1A maximum @ 5V dc ±5% (4.75 - 5.25)
Input Overvoltage Protection	Reverse polarity protected
Interruption	Output voltage will stay within specifications when input drops out for 10ms at 10V with maximum load.

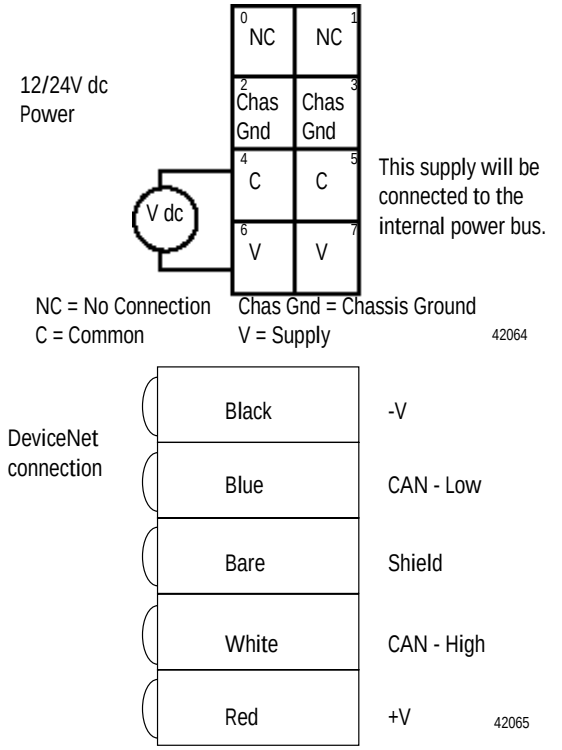
General Specifications	
Indicators	3 red/green status indicators Adapter status DeviceNet status PointBus status 2 green power supply status indicators: System Power (PointBus 5V power) Field Power (24V from field supply)
Power Consumption	8.1W maximum @ 28.8V dc
Power Dissipation	2.8W maximum @ 28.8V
Thermal Dissipation	9.5 BTU/hr maximum @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Nominal Voltage Supply Voltage Range Supply Current	 24V dc 10-28.8V dc range, 10A maximum
Dimensions Inches (Millimeters)	3.0H x 2.16W x 5.25L (76.2H x 54.9W x 133.4L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations DeviceNet Power Supply	 1 - Black Wire -V 2 - Blue Wire CAN Low 3 - Bare Wire Shield 4 - White Wire CAN High 5 - Red Wire +V 0 - No Connection 1 - No Connection 2 - Chassis Ground 3 - Chassis Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	9.0 oz/255 grams
Publications Installation Instructions	 1734-IN007A-EN-P
Agency Certification (when product is marked)	CE C DeviceNet

1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-PDN DeviceNet Interface



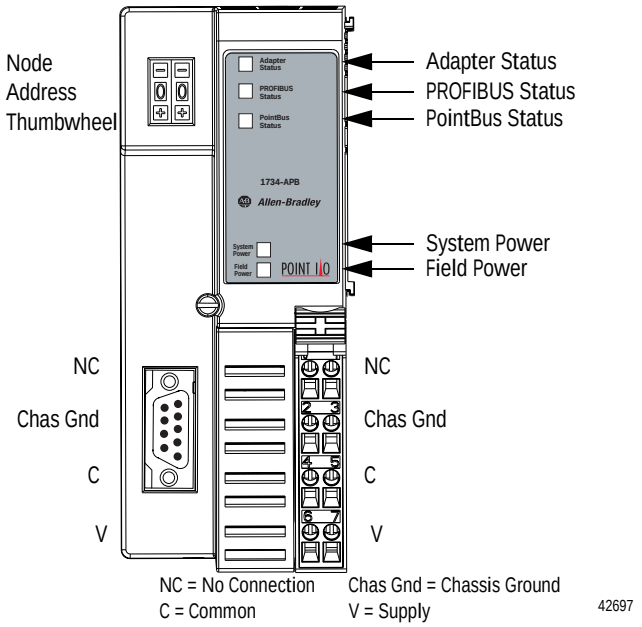
Wiring



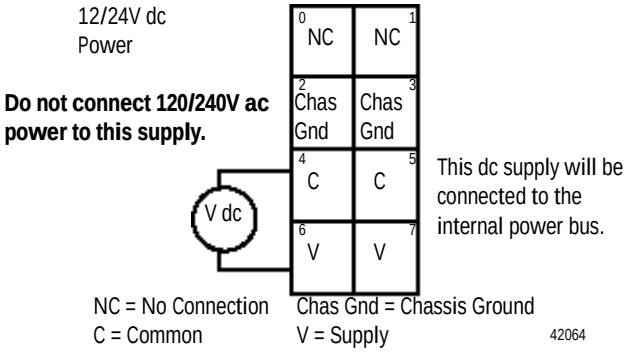
Specifications - 1734-PDN	
Communication Interface Specifications	
Expansion I/O Capacity	12 modules
Communication Rate	125K bit/s (500m max) 250K bit/s (250m max) 512K bit/s (100m max)
DeviceNet Power Requirements	24V dc (+4% = 25V dc max) @ 400mA max
DeviceNet Cable	Allen-Bradley part number 1485C-P1-Cxxx Refer to publication DN-2.5 for details
Module Location	Starter module - left side of 1734 system
DeviceNet Power Specifications	
Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this interface.
Input Voltage Rating	24V dc nominal
Input Voltage Range	11-25V dc DeviceNet specification
Input Overvoltage Protection	Reverse polarity protected
Inrush Current	6A for 5ms
Indicators	2 green power supply status indicators System power (PointBus 5V power) DeviceNet power (24V from DeviceNet)
General Specifications	
Pointbus Output Current	1.3A max @ 5V dc ±5% (4.75-5.25)
Power Consumption	8.0W max @ 25V dc
Power Dissipation	1.2W max @ 25V
Thermal Dissipation	4.1 BTU/hr max @ 25V dc
Isolation Voltage	1528Vrms or 2593V dc
Field Power Bus Voltage Current	 10V to 28.8V dc range, 120V ac, or 240V ac 50/60Hz 10A max
Dimensions HxWxL	76.2mm x 25.4mm x 133.4mm (3.0in x 1.0in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to +185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations DeviceNet Power Supply	 1 - Black Wire -V 2 - Blue Wire CAN Low 3 - Bare Wire Drain 4 - White Wire CAN High 5 - Red Wire +V 0 - No Connection 1 - No Connection 2 - Chassis Ground 3 - Chassis Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	4.56 oz/129.3 grams
Publications Installation Instructions	 1734-IN057B-EN-P
Agency Certification	CE DeviceNet

1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

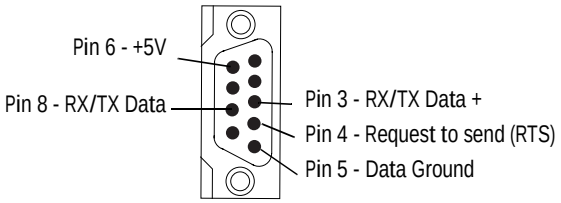
1734-APB PROFIBUS Adapter



Wiring



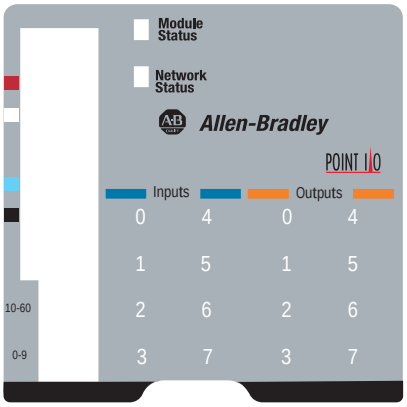
PROFIBUS Connection Plug Wiring



Specifications - 1734-APB	
Communication Interface Specifications	
Expansion I/O Capacity	12 modules (Note: Total expansion up to 63 modules - 12 modules with 1734-APB - add 1734-EP24DC modules for additional 12 modules for each EP24 up to 63 module maximum)
Module Location	Starter module - left side of 1734 system
Power Specifications	
Power Supply	Note: In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.
Input Voltage Rating	24V dc nominal 10-28.8V dc range
Field Side Power Requirements	24V dc (+20% = 28.8V dc max) @ 400mA max
Input Overvoltage Protection	Reverse polarity protected
Inrush Current	6A max for 10ms
Indicators	3 red/green status indicators Adapter status PROFIBUS status PointBus status 2 green power supply status indicators System power (PointBus 5V power) Field power (24V from field supply)
Interruption	Output voltage will stay within specifications when input drops out for 10ms at 10V with max load.
General Specifications	
Pointbus Output Current	1A max @ 5V dc ±5% (4.75-5.25)
Power Consumption	8.1W max @ 28.8V dc
Power Dissipation	2.8W max @ 28.8V
Thermal Dissipation	9.5 BTU/hr max @ 28.8V dc
Isolation Voltage	1250Vrms/V ac
Field Power Bus Nominal Voltage Supply Voltage Range Supply Current	 24V dc 10-28.8V dc range 10A max
Dimensions HxWxL	76.2mm x 54.9mm x 133.4mm (3.0in x 2.16in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -10 to +55°C (14 to 131°F) -40 to 85°C (-40 to +185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations PROFIBUS Power Supply	 1 - Not Connected 6 - +5V Bus 2 - Not Connected 7 - Not Connected 3 - +RTXTX Data Line 8 - Negative RTX/TX 4 - Request To Send 9 - Not Connected 5 - Ground Bus Housing - Earth Ground 0 - No Connection 1 - No Connection 2 - Chassis Ground 3 - Chassis Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	9.0 oz/255 grams
Publications Installation Instructions	 1734-IN014A-EN-P
Agency Certification	CE

1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

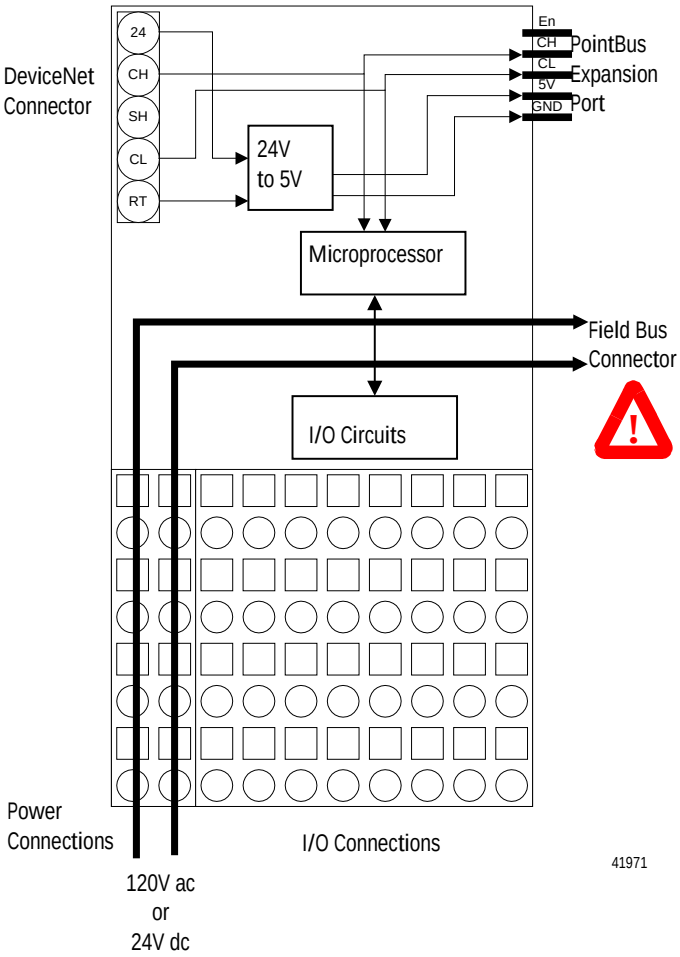
About the 1734D Series



The 1734D Series is a set of DIN-rail mounted products with an integrated DeviceNet communication interface, various combinations of onboard I/O points, removable terminations, and a PointBus expansion port.

The DeviceNet interface presents the integrated I/O as a single DeviceNet node while expansion I/O modules will appear as separate nodes.

The 1734D Series includes a non-isolated DeviceNet communication interface. The 24V dc from the DeviceNet connection powers a non-isolated dc/dc converter that generates +5V dc. This +5V dc powers the 1734D Series electronics and connects to the PointBus port to power the expansion I/O electronics.

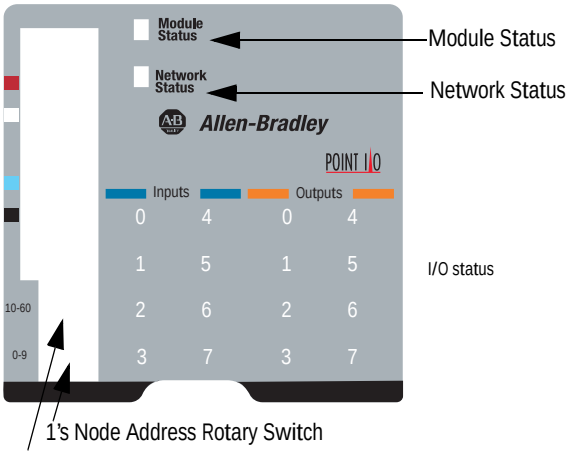


ATTENTION

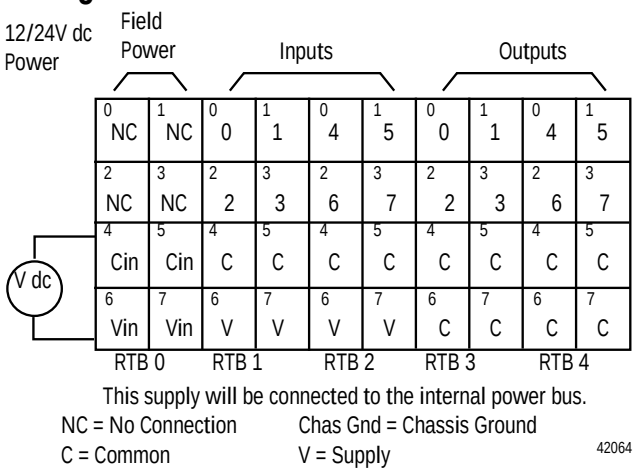
Whatever field power you supply is connected to the internal field-power bus. **For example, if 120V ac is applied to the power connections, there will be 120V ac applied to the modules through the internal field-power bus.**

POINT I/O modules to the right of the 1734D products will also have that internal power bus voltage applied, unless you use a 1734-FPD to interrupt and change the field power-bus voltage.

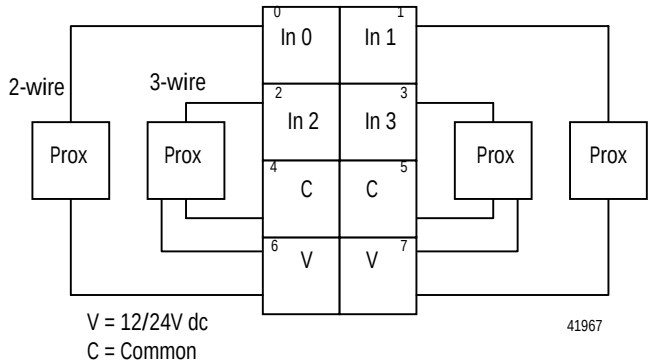
1734D-IB8XOB8E, -IB8XOB8ES Module



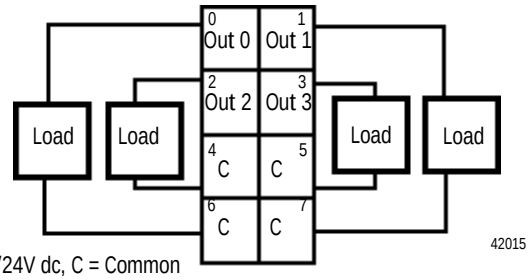
Wiring



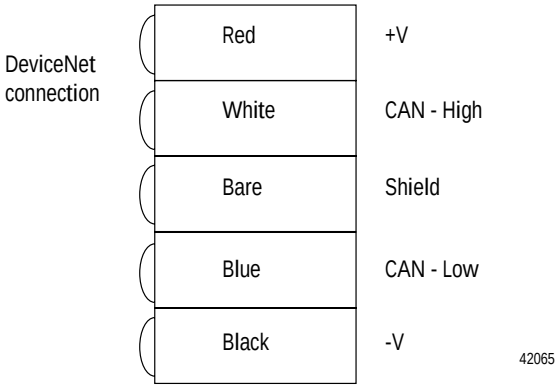
Sink Input



Output



V = 12/24V dc, C = Common
Field power is supplied from internal power bus

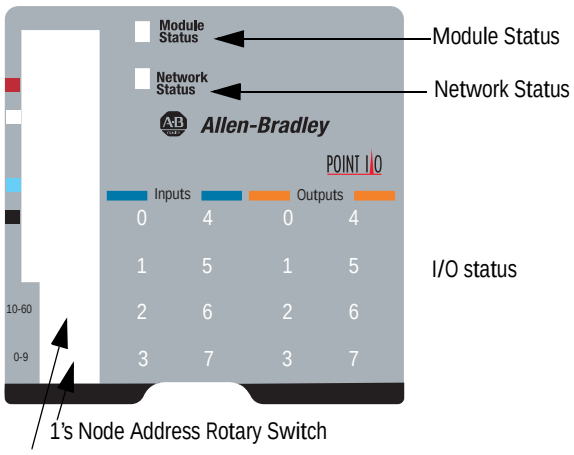


Specifications - 1734D-IB8XOB8E, -IB8XOB8ES	
Input Specifications are IEC 1+ 24V dc Input Compliant	
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2.5mA min 6.3mA nominal @ 24V dc 7.6mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	4.7K Ω max (3.6K Ω nominal)
Input Filter Time OFF to ON ON to OFF	 0.5ms hardware + (0-65ms selectable) 0.5ms hardware + (0-65ms selectable)
Output Specifications	
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max
ON-State Voltage Drop	0.2V max @ 0.75A
ON-State Current	0.75A max (electronically protected)
OFF-State Voltage	1.5V dc max

General Specifications	
Pointbus Output Current	1A max @ 5V dc output power
DeviceNet Current	95mA max for POINTBlock 350mA for maximum with expansion of 12 POINT I/O modules
Number of POINT I/O Expansion Modules	12 max at expansion port
Isolation Voltage	1250Vrms or 2121V dc for 1s between user power and DeviceNet
Indicators	1 red/green module status indicator 1 red/green network status indicator 16 I/O status indicators (8 input/8 output)
Power Dissipation	2.0W max @ 24V dc
Power Consumption	8.2W max @ 24V dc
Field Power Bus Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc 10A max
Dimensions HxWxL	76.2mm x 60.0mm x 133.4mm (3.00in x 2.36in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55ºC (-4 to +131ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75^{0}C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations DeviceNet Field Power Supply 	 1 - Black Wire -V 2 - Blue Wire CAN Low 3 - Bare Wire Drain 4 - White Wire CAN High 5 - Red Wire +V 0 - No Connection 1 - No Connection 2 - No Connection 3 - No Connection 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	12.02 oz/340.77 grams
Publication Installation Instructions	 1734-5.20
Agency Certification	c UL us Class I Division 2 certified Groups A, B, C, D certified CE C-Tick

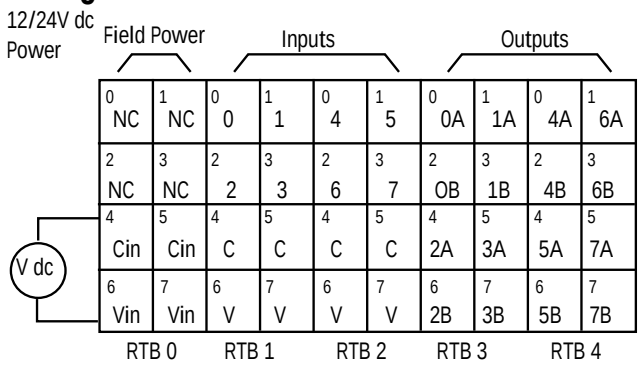
1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”

1734D-IB8XOW8, -IB8XOW8S Module



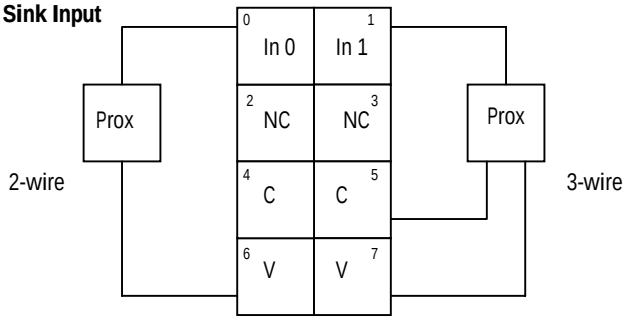
42004

Wiring



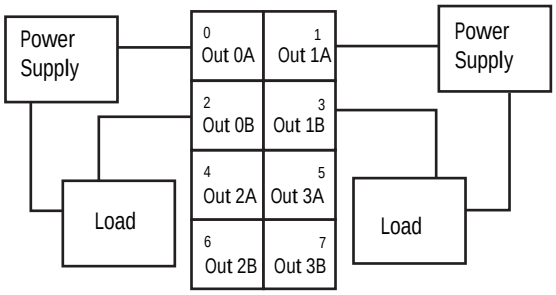
42270

Sink Input

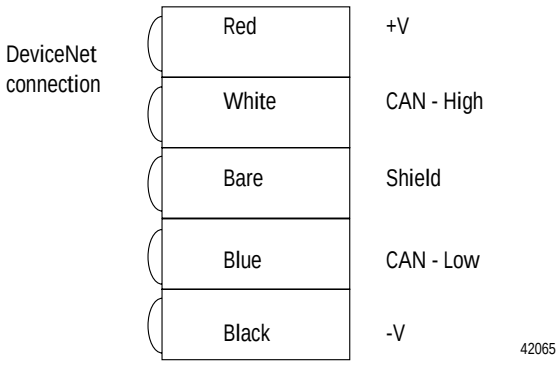


41966

Output Wiring (Load Powered by External Power)



42271



42065

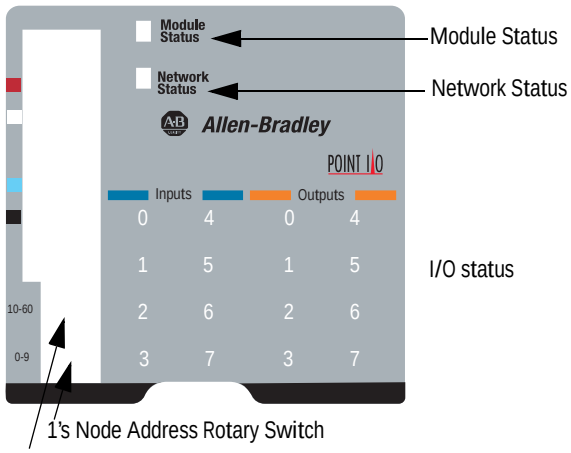
Specifications - 1734D-IB8XOW8, -IB8XOW8S	
Input Specifications are IEC 1+ 24V dc Input Compliant	
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2.5mA min 6.3mA nominal @ 24V dc 7.6mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	5.3K Ω max
Input Filter Time OFF to ON ON to OFF	 0.5ms hardware + (0-65ms selectable) 0.5ms hardware + (0-65ms selectable)

Output Specifications	
Relay Type	Form A, normally open (N.O.) Single Pole, Single Throw (SPST)
Output Voltage Range (load dependent)	5-28.8V dc @ 2.0A resistive 48V dc @ 0.5A resistive 125V dc @ 0.25A resistive 125V ac @ 2.0A resistive 240V ac @ 2.0A resistive
Output Current Rating (at rated power)	Resistive 2A @ 5-28.8V dc 0.5A @ 48V dc 0.25A @ 125V dc 2A @ 125V ac 2A @ 240V ac Inductive 2.0A steady state @ 5-28.8V dc, L/R - 7ms 0.5A steady state @ 48V dc, L/R = 7ms 0.25A steady state @ 125V dc, L/R = 7ms 2.0A steady state, 15A make @ 125V ac, PF = cos θ = 0.4 2.0A steady state, 15A make @ 240V ac, PF = cos θ = 0.4
Power Rating	250W max for 125V ac resistive loads 480W max for 240V ac resistive loads 60W max for 28.8V dc resistive loads 24W max for 48V dc resistive loads 31W max for 125V dc resistive loads 250VA max for 125V ac inductive loads 480VA max for 240V ac inductive loads 60VA max for 28.8V dc inductive loads 24VA max for 48V dc inductive loads 31VA max for 125V dc inductive loads
Minimum Load	10mA per point
Initial Contact Res.	30mΩ
Switching Frequency	1 operation/3s at rated load
Bounce Time	1.2ms average
Expected Contact Life	300K cycles resistive; 100K cycles inductive
Maximum OFF-State Leakage	1.5mA max
Output Delay Time	10ms max ON/OFF

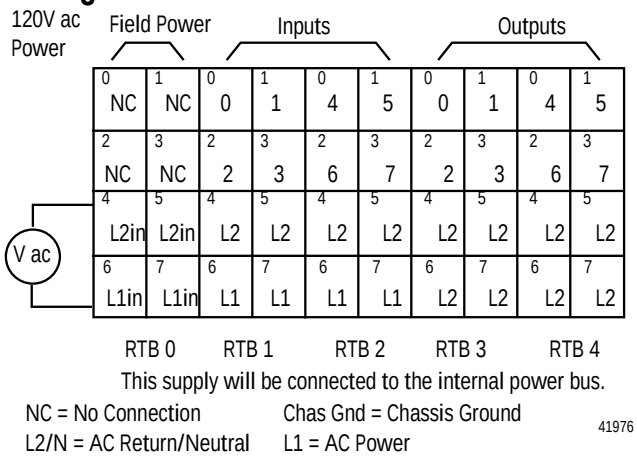
General Specifications		
Pointbus Output Current	1A max @ 5V dc output	
DeviceNet Current	95mA max for POINTBlock 350mA for maximum with expansion of 12 POINT I/O modules	
Number of POINT I/O Expansion Modules	12 max at expansion port	
Isolation Voltage	1250Vrms or 2121V dc for 1s between user power and DeviceNet	
Indicators	1 red/green module status indicator 1 red/green network status indicator 16 I/O status indicators (8 input/8 relay output)	
Power Dissipation	2.0W max @ 24V dc	
Power Consumption	8.2W max @ 24V dc	
Field Power Bus Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc 10A max	
Dimensions HxWxL	76.2mm x 60.0mm x 133.4mm (3.00in x 2.36in x 5.25in)	
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6	
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]	
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)	
Field Wiring Terminations DeviceNet Field Power Supply 	 1 - Black Wire 2 - Blue Wire 3 - Bare Wire 4 - White Wire 5 - Red Wire 0 - No Connection 2 - No Connection 4 - Common 6 - Supply	 -V CAN Low Drain CAN High +V 1 - No Connection 3 - No Connection 5 - Common 7 - Supply
Mass	13.82 oz/391.80 grams	
Publication Installation Instructions	 1734-5.21	
Agency Certification	c UL us Class I Division 2 certified Groups A, B, C, D certified CE C-Tick	

1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

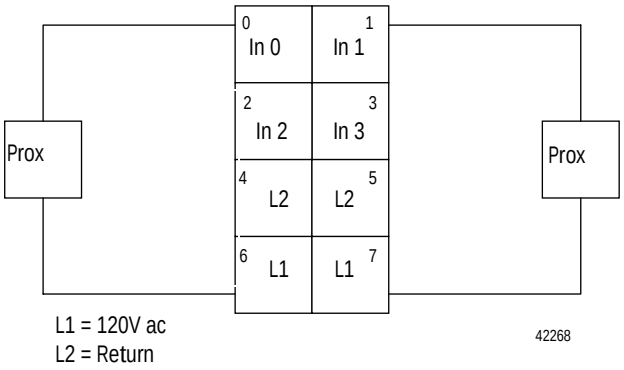
1734D-IA8XOA8, -IA8XOA8S Module



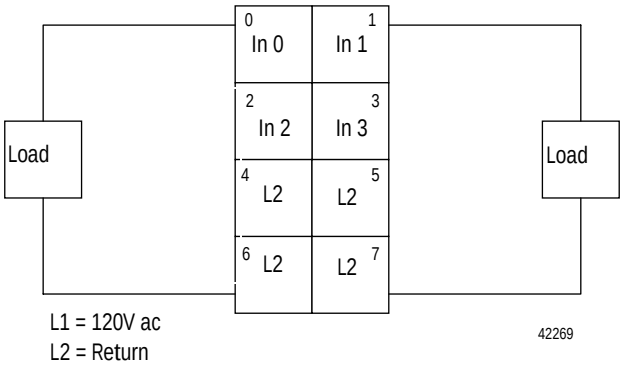
Wiring

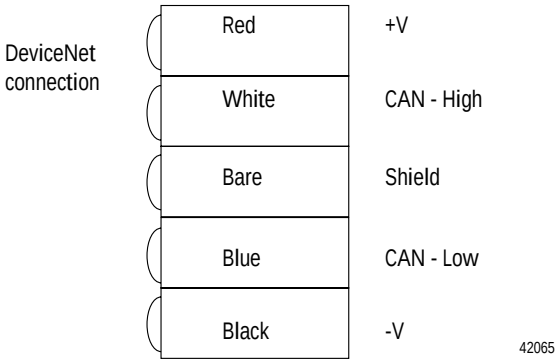


Input



Output Wiring





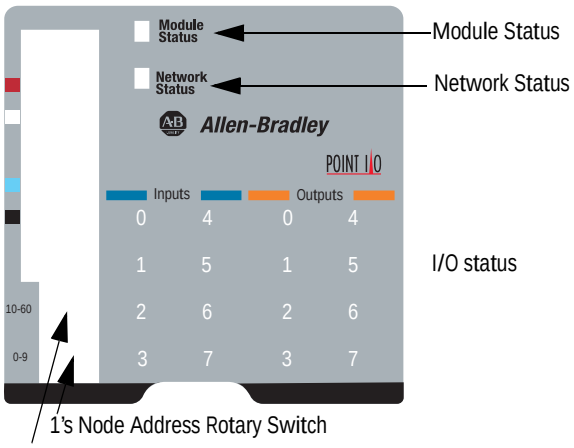
Specifications - 1734D-IA8XOA8, -IA8XOA8S	
Input Specifications	
ON-State Voltage	65V ac min
ON-State Current	5.0mA min
OFF-State Voltage	43V ac max
OFF-State Current	2.5mA max
Nominal Input Impedance	17.0kΩ
Input Delay Time OFF to ON ON to OFF	 20.0ms hardware + (0-65ms selectable) 20.0ms hardware + (0-65ms selectable)
External AC Power Supply Voltage	120V ac, 60Hz nominal
External AC Power Supply Voltage Range	85-132V ac, 47-63Hz

Output Specifications	
Maximum ON-State Voltage Drop	1.2V @ 0.5A
ON-State Current	10mA per output min
ON-State Current	500mA per output max @ 55°C (sufficient to operate an A-B Bulletin 500 NEMA size 3 motor starter) 750mA per output max @ 40°C 1A per output max @ 30°C
OFF-State Leakage	2.25mA max
Output Voltage Range	85-132V ac, 47-63Hz
Output Current Rating	6A per module (6 channels @ 1A each max)
Delay Time OFF to ON ON to OFF	 1ms max ½ cycle max
External AC Power Supply Voltage	120V ac, 60Hz nominal
External AC Power Supply Voltage Range	85-132V ac, 47-63Hz

General Specifications	
Pointbus Output Current	1A max @ 5V ac output
DeviceNet Current	95mA max for POINTBlock 350mA for maximum with expansion of 12 POINT I/O modules
Number of POINT I/O Expansion Modules	12 max at expansion port
Isolation Voltage	1250Vrms or 2121V dc for 1s between user power and DeviceNet
Indicators	1 red/green module status indicator 1 red/green network status indicator 16 I/O status indicators (8 input/8 output)
Power Dissipation	2.0W max @ 24V dc
Power Consumption	8.2W max @ 24V dc
Field Power Bus Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc 10A max
Dimensions HxWxL	76.2mm x 60.0mm x 133.4mm (3.00in x 2.36in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations DeviceNet	 1 - Black Wire -V 2 - Blue Wire CAN Low 3 - Bare Wire Drain 4 - White Wire CAN High 5 - Red Wire +V
Field Power Supply	0 - No Connection 1 - No Connection 2 - No Connection 3 - No Connection 4 - AC return 5 - AC return 6 - AC power 7 - AC power
Mass	13.88 oz/393.50 grams
Publication Installation Instructions	 1734-5.22
Agency Certification	c UL us Class I Division 2 certified Groups A, B, C, D certified CE C-Tick

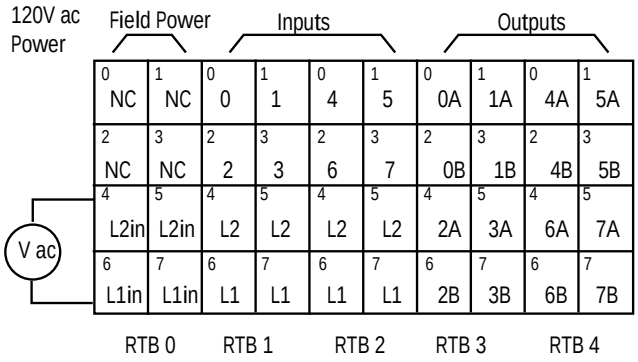
1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734D-IA8XOW8, -IA8XOW8S Module



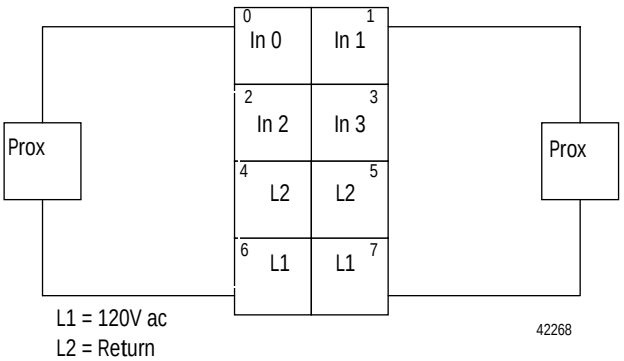
42004

Wiring



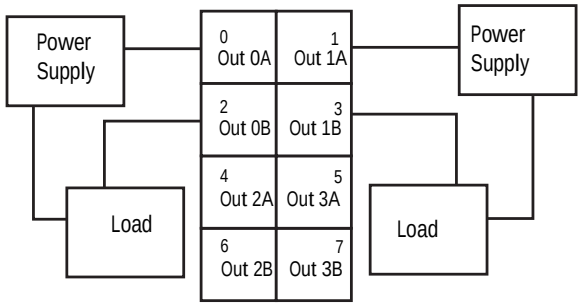
41959

Input

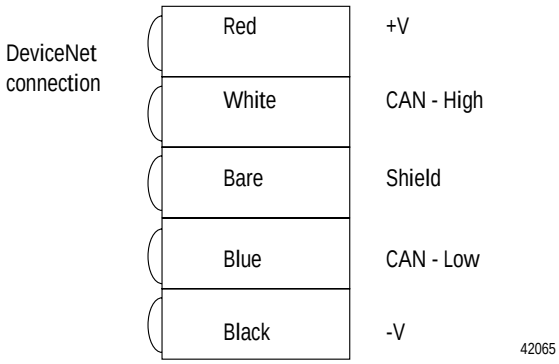


42268

Output Wiring (Load Powered by External Power)



42271



42065

Specifications - 1734D-IA8XOW8, -IA8XOW8S	
Input Specifications	
ON-State Voltage	65V ac min
ON-State Current	5.0mA min
OFF-State Voltage	43V ac max
OFF-State Current	2.5mA max
Nominal Input Impedance	17.0kΩ
Input Delay Time OFF to ON ON to OFF	 20.0ms hardware + (0-65ms selectable) 20.0ms hardware + (0-65ms selectable)
External AC Power Supply Voltage	120V ac, 60Hz nominal
External AC Power Supply Voltage Range	85-132V ac, 47-63Hz

Output Specifications	
Relay Type	Form A, normally open (N.O.) Single Pole, Single Throw (SPST)
Output Voltage Range (load dependent)	5-30V dc @ 2.0A resistive 48V dc @ 0.5A resistive 125V dc @ 0.25A resistive 125V ac @ 2.0A resistive 240V ac @ 2.0A resistive
Output Current Rating (at rated power)	Resistive2A @ 5-30V dc 0.5A @ 48V dc 0.25A @ 125V dc 2A @ 125V ac 2A @ 240V ac Inductive 2.0A steady state @ 5-30V dc, L/R - 7ms 0.5A steady state @ 48V dc, L/R = 7ms 0.25A steady state @ 125V dc, L/R = 7ms 2.0A steady state, 15A make @ 125V ac, PF = cos θ = 0.4 2.0A steady state, 15A make @ 240V ac, PF = cos θ = 0.4
Power Rating	250W max for 125V ac resistive loads 480W max for 240V ac resistive loads 60W max for 28.8V dc resistive loads 24W max for 48V dc resistive loads 31W max for 125V dc resistive loads 250VA max for 125V ac inductive loads 480VA max for 240V ac inductive loads 60VA max for 28.8V dc inductive loads 24VA max for 48V dc inductive loads 31VA max for 125V dc inductive loads
Minimum Load	10mA per point
Initial Contact Res.	30mΩ
Switching Frequency	1 operation/3s at rated load
Bounce Time	1.2ms average
Expected Contact Life	300K cycles resistive; 100K cycles inductive
Maximum OFF-State Leakage	1.5mA max
Output Delay Time	10ms max ON/OFF

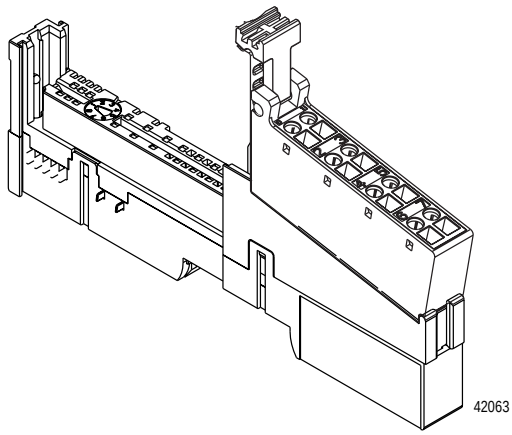
General Specifications	
Pointbus Output Current	1A max @ 5V ac output
DeviceNet Current	95mA max for POINTBlock 350mA for maximum with expansion of 12 POINT I/O modules
Number of POINT I/O Expansion Modules	12 max at expansion port
Isolation Voltage	1250Vrms or 2121V dc for 1s between user power and DeviceNet
Indicators	1 red/green module status indicator 1 red/green network status indicator 16 I/O status indicators (8 input/8 relay output)
Power Dissipation	2.0W max @ 24V dc
Power Consumption	8.2W max @ 24V dc
Field Power Bus Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc 10A max
Dimensions HxWxL	76.2mm x 60.0mm x 133.4mm (3.00in x 2.36in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations DeviceNet Field Power Supply	 1 - Black Wire -V 2 - Blue Wire CAN Low 3 - Bare Wire Drain 4 - White Wire CAN High 5 - Red Wire +V 0 - No Connection 1 - No Connection 2 - No Connection 3 - No Connection 4 - AC return 5 - AC return 6 - AC power 7 - AC power
Mass	13.87 oz/393.41 grams
Publication Installation Instructions	 1734-5.23
Agency Certification	c UL us Class I Division 2 certified Groups A, B, C, D certified CE C-Tick

1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Use the following table to determine which wiring base assembly will meet your application needs.

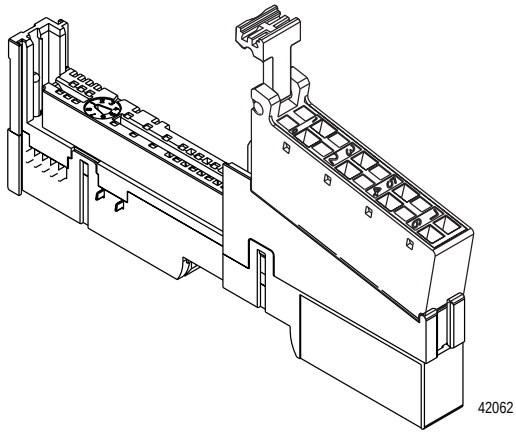
Adapter	Purpose	See Page
1734-TB, -TBS	Wiring Base Assembly with 8 Screw-Clamp or Spring-Clamp Removable Terminal Blocks (Cat Nos. 1734-TB, -TBS)	26
1734-TB3, -TB3S	Wiring Base Assembly with 12 Screw-Clamp or Spring-Clamp Removable Terminal Blocks (Cat Nos. 1734-TB3, -TB3S)	27

Wiring Base Assembly with 8 Screw-Clamp Removable Terminal Blocks



42063

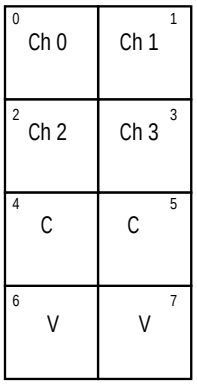
Wiring Base Assembly with 8 Spring-Clamp Removable Terminal Blocks



42062

The mounting base (1734-MB) and Removable Terminal Blocks (1734-RTB or -RTBS) are sold together as wiring assemblies under the catalog number 1734-TB (screw clamp terminations) and 1734-TBS (spring clamp terminations).

Wiring

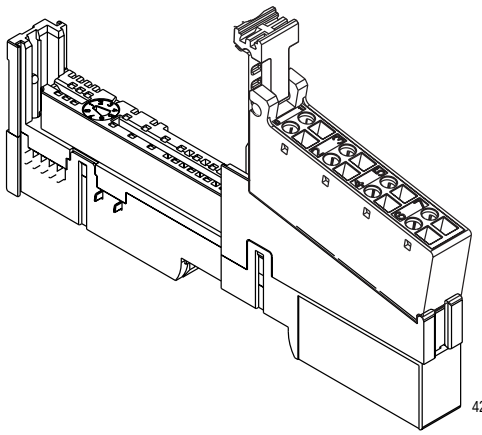


41975

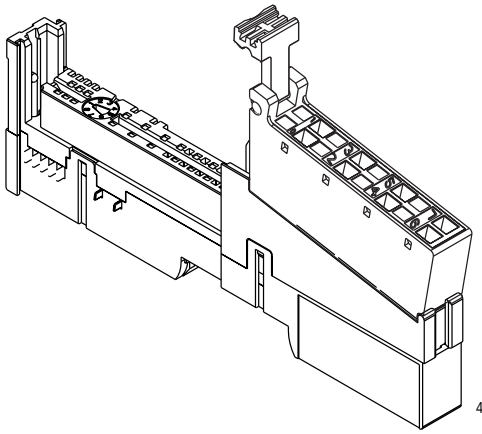
Specifications - 1734-TB, -TBS	
General Specifications	
Field Power Bus Supply Voltage Supply Current	 28.8V dc, 120/240V ac 10A maximum
Dimensions Inches (Millimeters)	2.56H x 0.472W x 6.25L (65H x 12W x 160L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Mass	1734-TB - 3.44 oz/97.5 grams 1734-TBS - 3.07 oz/87.0 grams
Publications Installation Instructions	 1734-IN511A-EN-P
Agency Certification (when product is marked)	c UR us marked by Underwriters Laboratories CE

1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Wiring Base Assembly with 12 Screw-Clamp Removable Terminal Blocks

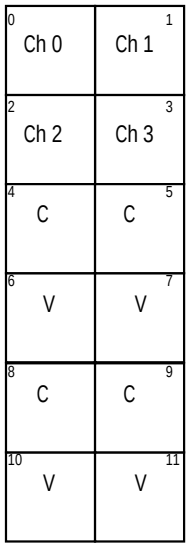


Wiring Base Assembly with 12 Spring-Clamp Removable Terminal Blocks



The mounting base (1734-MB) and Removable Terminal Blocks (1734-RTB or -RTBS) are sold together as wiring assemblies under the catalog number 1734-TB3 (screw clamp terminations) and 1734-TB3S (spring clamp terminations).

Wiring



Specifications - 1734-TB3, -TB3S

General Specifications

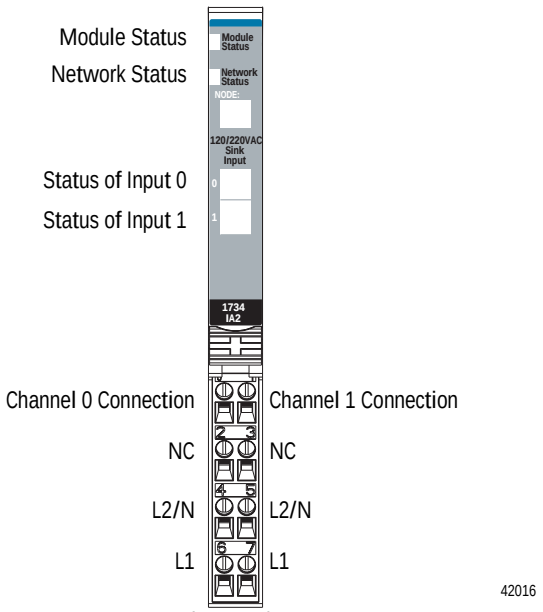
Field Power Bus Supply Voltage Supply Current	 28.8V dc, 120/240V ac 10A maximum
Dimensions Inches (Millimeters)	2.56H x 0.472W x 6.25L (65H x 12W x 160L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Mass	1734-TB3 - 3.44 oz/97.5 grams 1734-TB3S - 3.07 oz/87.0 grams
Publications Installation Instructions	 1734-IN013A-EN-P
Agency Certification (when product is marked)	cUR us marked by Underwriters Laboratories CE

1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Use the following table to determine which ac module will meet your application needs.

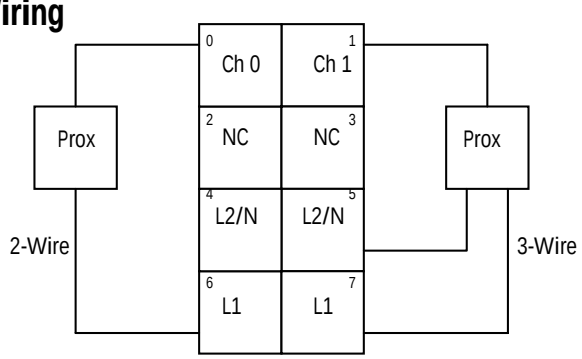
AC Module	Purpose	See Page
1734-IA2	120V ac 2 Input Module (Cat. No. 1734-IA2)	29
1734-OA2	1734-OA2 Module	30
1734-IM2	220V ac 2 Input Module (Cat. No. 1734-IM2)	31

1734-IA2 Module



NC = No Connection L2/N = 120V ac Return
L1 = 120V ac Supply

Wiring



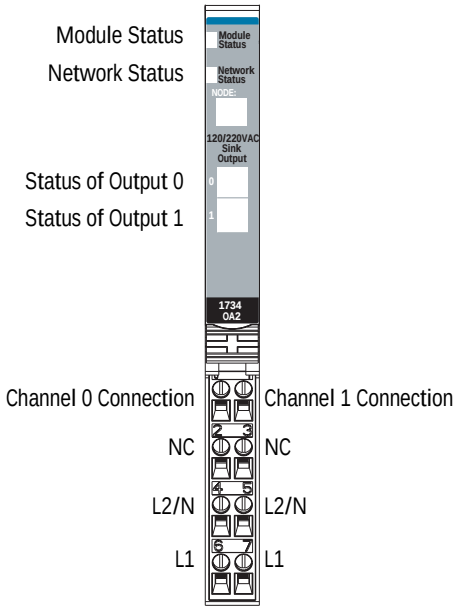
Ch 0 = Channel 0 Ch 1 = Channel 1
NC = No Connection L2/N = 120V ac Neutral
L1 = 120V ac

Specifications - 1734-IA2 120V ac Input Module	
This module is IEC3 120V ac Input Compliant	
Input Specifications	
Inputs per Module	2 (1 group of 2) non-isolated, sinking
ON-State Voltage	65V ac minimum 120V ac nominal 132V ac maximum
ON-State Current	3.7mA minimum 6.9mA nominal @ 120V ac, 60Hz
OFF-State Voltage	43V ac maximum
OFF-State Current	2.5mA maximum
Nominal Input Impedance	10.6kΩ
Delay Time[1] OFF to ON and ON to OFF	20ms hardware filter plus 1ms - 64ms digital filter programmable in increments of 1ms
Indicators	2 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	8
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA maximum @ 5V dc
Power Dissipation	0.7W maximum @ 28.8V dc
Thermal Dissipation	2.4 BTU/hr maximum @ 28.8V dc
Isolation Voltage	Tested at 1250V rms/V ac for 1s
External AC Power Supply Voltage	120V ac, 60Hz nominal
External AC Power Supply Voltage Range	85-132V ac, 47-63Hz
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded rated at 75°C or greater 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - No Connection 3 - No Connection 4 - L2/N 5 - L2/N 6 - L1 7 - L1
Publications Installations Instructions	 1734-IN010A-EN-P
Mass	1.09 oz/30.9 grams
Agency Certification (when product is marked)	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Off/on delay is time from a valid output “on” signal to output energization. On/off delay is time from a valid output “off” signal to output deenergization.

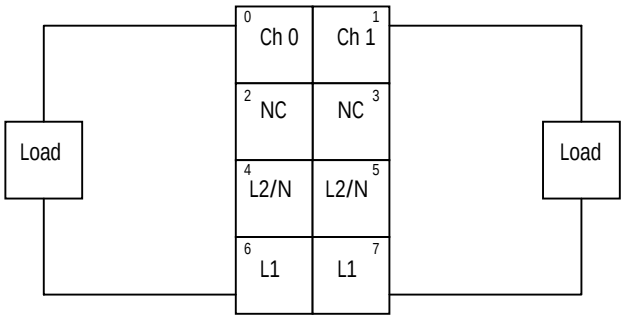
2 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”.

1734-OA2 Module



NC = No Connection L2/N = 120/220V ac Return
L1 = 120/220V ac Supply

Wiring



Ch 0 = Channel 0 Ch 1 = Channel 1
NC = No Connection L2/N = 120/220V ac Return
L1 = 120/220V ac Supply
Field power is supplied from the internal power bus.

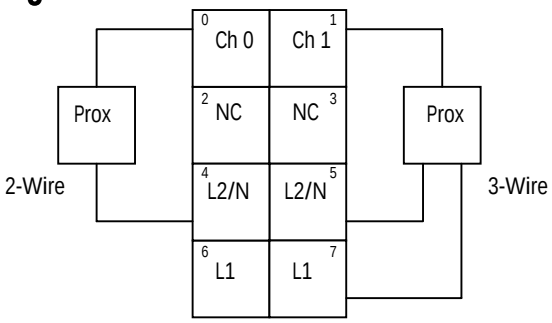
Specifications - 1734-OA2 220V ac Output Module	
This module is IEC3 120V/220V ac Output Compliant	
Output Specifications	
Outputs per Module	2 non-isolated, sourcing
ON-State Voltage Range	74V ac minimum 120/220V ac nominal 264V ac maximum
ON-State Voltage Drop	1.0V maximum @ 0.75A
ON-State Current	10mA minimum per channel 750mA maximum per channel
OFF-State Leakage	2.7mA max
Output Current Rating	1.5A (2 channels @ 0.75A each)
Surge Current	16A for 100ms, repeatable every 10s
Delay Time[1] OFF to ON ON to OFF	 1/2 cycle maximum 1/2 cycle maximum
Indicators (field side indication, logic driven)	2 yellow status 2 green/red status
Keyswitch Position	8
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA maximum @ 5V dc
Power Dissipation	0.8W maximum @ 28.8V dc
Thermal Dissipation	2.7 BTU/hr maximum @ 28.8V dc
Isolation Voltage	Tested at 1500V rms/V ac dc for 1s
External AC Power Supply Voltage	120/220V ac, 60Hz nominal
External AC Power Supply Voltage Range	85-264V ac, 47-63Hz
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded rated at 75°C or greater 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - No Connection 3 - No Connection 4 - L2/N Return 5 - L2/N Return 6 - L1 7 - L1
Mass	1.09 oz/30.9 grams
Publications Installation Instructions	 1734-IN009A-EN-P
Agency Certification (when product is marked)	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Off/on delay is time from a valid output “on” signal to output energization. On/off delay is time from a valid output “off” signal to output deenergization.

2 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”.

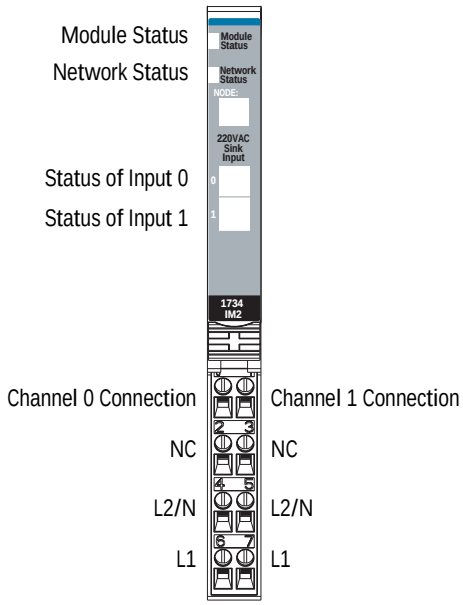
1734-IM2 Module

Wiring



Ch 0 = Channel 0 Ch 1 = Channel 1
NC = No Connection L2/N = 220V ac Neutral
L1 = 220V ac

41968



41962

NC = No Connection L2/N = 220V ac Return
L1 = 220V ac Supply

Specifications - 1734-IM2 220V ac Output Module	
This module is IEC3 220V ac input compliant.	
Input Specifications	
Number of Inputs	2 (1 group of 2) non-isolated, sinking
ON-State Voltage	159V ac minimum 220V ac nominal 264V ac maximum
ON-State Current	5.7mA minimum 8.0mA nominal 9.61mA maximum
OFF-State Voltage	43V ac maximum
OFF-State Current	2.9mA maximum
Nominal Input Impedance	22.3kΩ
Delay Time[1] OFF to ON and ON to OFF	20ms hardware filter plus 1ms - 64ms digital filter programmable in increments of 1ms
Indicators	2 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	8
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA maximum @ 5V dc
Power Dissipation	0.7W maximum @ 28.8V dc
Thermal Dissipation	2.4 BTU/hr maximum @ 28.8V dc
Isolation Voltage	Tested at 1500V rms/V for 1s
External AC Power Supply Voltage	220V ac, 60Hz nominal
External AC Power Supply Voltage Range	159-264V ac, 47-63Hz
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or greater 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - No Connection 3 - No Connection 4 - L2/N 5 - L2/N 6 - L1 7 - L1
Mass	1.09 oz/30.90 grams
Publications Installation Instructions	 1734-IN008A-EN-P
Agency Certification (when product is marked)	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

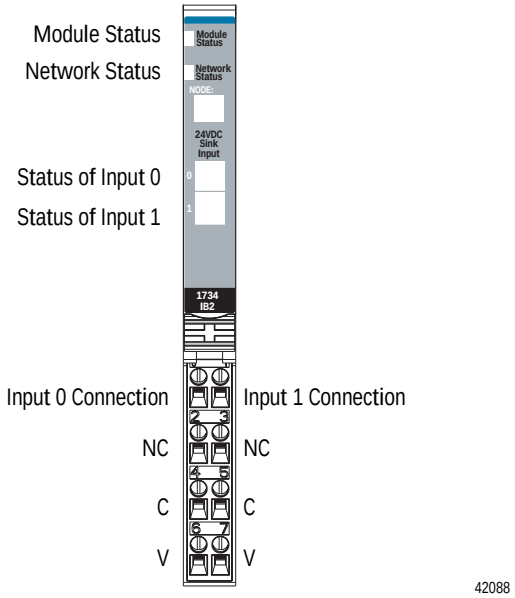
1 Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

2 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines.".

Use the following table to determine which dc module will meet your application needs.

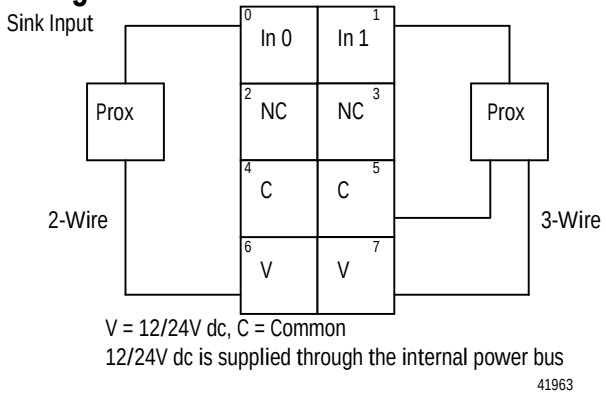
DC Module	Purpose	See Page
1734-IB2	24V dc 2 Input Sink Module (Cat. No. 1734-IB2)	33
1734-IB4	24V dc 4 Input Sink Module (Cat. No. 1734-IB4)	34
1734-IV2	24V dc 2 Input Source Module (Cat. No. 1734-IV2)	35
1734-IV4	24V dc 4 Input Source Module (Cat. No. 1734-IV4)	36
1734-OB2E	24V dc Electronically Protected 2 Point Output Module (Cat. No. 1734-OB2E)	37
1734-OB4E	24V dc Electronically Protected 4 Point Output Module (Cat. No. 1734-0B4E)	38

1734-IB2 Module



Input = (0 and 1) NC = No Connection (2 and 3)
C = Common (4 and 5) V = Supply (6 and 7)

Wiring

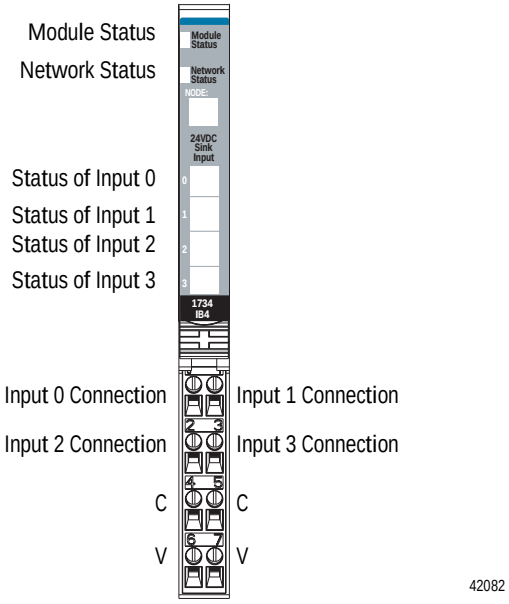


Specifications - 1734-IB2	
Input Specifications (IEC 3 24V dc Input Compliant)	
Inputs per Module	2 (1 group of 2) sinking
ON-State Voltage	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	4.7K Ω max, 3.6K Ω nominal
Input Filter Time[1] OFF to ON ON to OFF	 0.5 hardware + (0-63ms selectable) 0.5 hardware + (0-63ms selectable)
Indicators	2 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75 mA max @ 5V dc
Power Dissipation	0.7W max @ 28.8V dc
Thermal Dissipation	2.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Supply Voltage Voltage Range	 24V dc nominal 10-28.8V dc
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - No Connection 3 - No Connection 4 - Common 5 - Common 6 - User Supply 7 - User Supply
Mass	1.09 oz/30.90 grams
Publication Installation Instructions	 1734-IN051B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Input off-to-on filter time is the time from a valid input signal to recognition by the module. Input on-to-off time is the time from a valid input signal to recognition by the module.

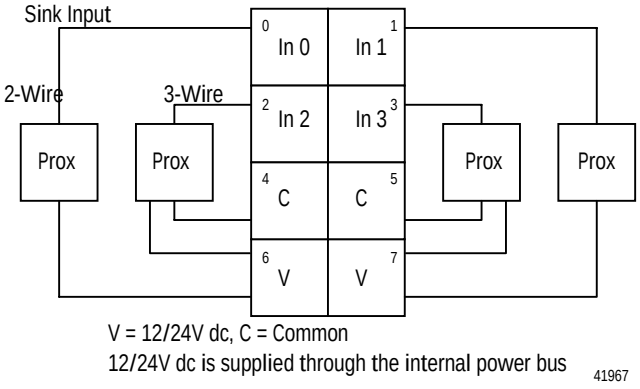
2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines.".

1734-IB4 Module



Input = (0, 1, 2, and 3) C = Common (4 and 5)
V = Supply (6 and 7)

Wiring

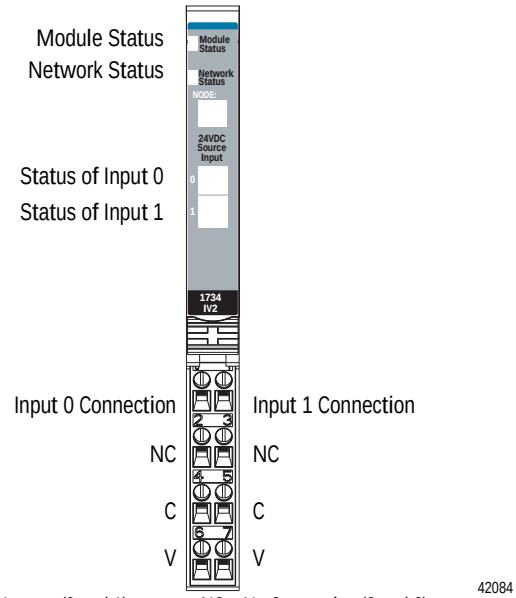


Specifications - 1734-IB4	
Input Specifications (IEC 3 24V dc Input Compliant)	
Inputs per Module	4 (1 group of 4) sinking
ON-State Voltage	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	4.7K Ω max, 3.6K Ω nominal
Input Filter Time[1] OFF to ON ON to OFF	 0.5 hardware + (0-63ms selectable) 0.5 hardware + (0-63ms selectable)
Indicators	4 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75 mA max @ 5V dc
Power Dissipation	1.0W max @ 28.8V dc
Thermal Dissipation	3.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Supply Voltage Voltage Range	 24V dc nominal 10-28.8V dc
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - Input 2 3 - Input 3 4 - Common 5 - Common 6 - User Supply 7 - User Supply
Mass	1.12 oz/31.75 grams
Publication Installation Instructions	 1734-IN051B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE C DeviceNet

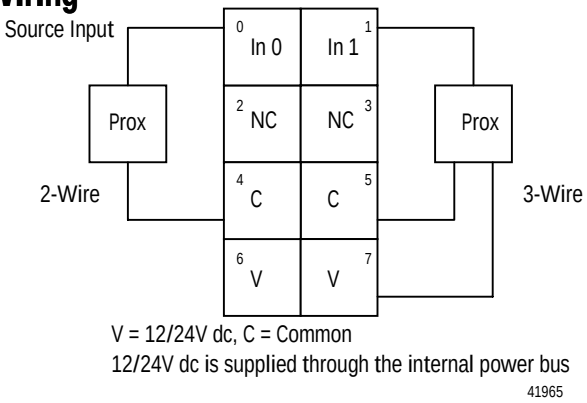
1 Input off-to-on filter time is the time from a valid input signal to recognition by the module. Input on-to-off time is the time from a valid input signal to recognition by the module.

2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-IV2 Module



Wiring

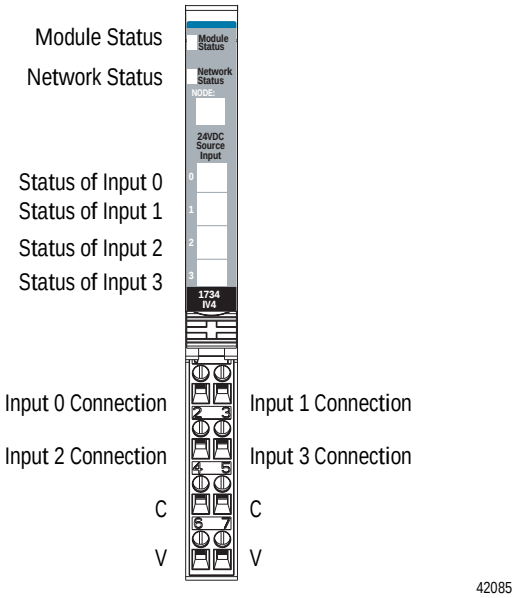


Specifications - 1734-IV2	
Input Specifications (IEC 3 24V dc Input Compliant)	
Inputs per Module	2 (1 group of 2) sourcing
ON-State Voltage	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	4.7K Ω max, 3.6K Ω nominal
Input Filter Time[1] OFF to ON ON to OFF	 0.5 hardware + (0-63ms selectable) 0.5 hardware + (0-63ms selectable)
Indicators	2 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA max @ 5V dc
Power Dissipation	0.7W max @ 28.8V dc
Thermal Dissipation	2.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Supply Voltage Voltage Range	 24V dc nominal 10-28.8V dc
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - No Connection 3 - No Connection 4 - Common 5 - Common 6 - User Supply 7 - User Supply
Mass	1.10 oz/31.19 grams
Publication Installation Instructions	 1734-IN052B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Input off-to-on filter time is the time from a valid input signal to recognition by the module. Input on-to-off time is the time from a valid input signal to recognition by the module.

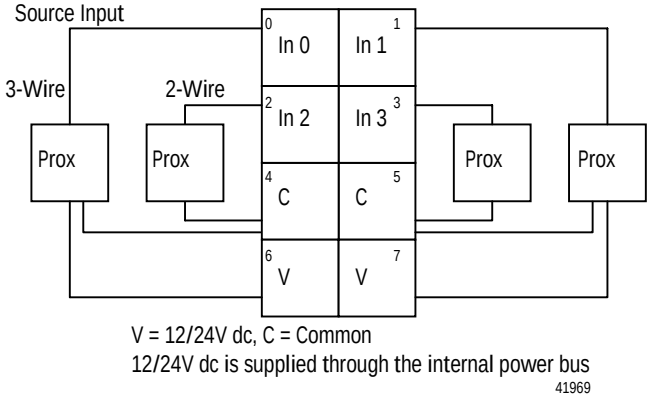
2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-IV4 Module



Input = (0, 1, 2, and 3) C = Common (4 and 5)
V = Supply (6 and 7)

Wiring

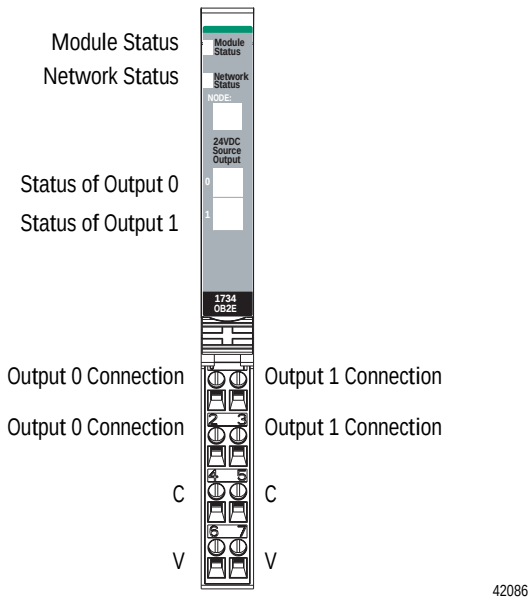


Specifications - 1734-IV4	
Input Specifications (IEC 3 24V dc Input Compliant)	
Inputs per Module	4 (1 group of 4) sourcing
ON-State Voltage	10V dc min 24V dc nominal 28.8V dc max
ON-State Current	2mA min 4mA nominal @ 24V dc 5mA max
OFF-State Voltage	5V dc max
OFF-State Current	1.5mA min
Input Impedance	4.7K Ω max, 3.6K Ω nominal
Input Filter Time[1] OFF to ON ON to OFF	 0.5 hardware + (0-63ms selectable) 0.5 hardware + (0-63ms selectable)
Indicators	4 yellow input status, logic side 1 green/red network status, logic side 1 green/red module status, logic side
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA max @ 5V dc
Power Dissipation	1.0W max @ 28.8V dc
Thermal Dissipation	3.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Supply Voltage Voltage Range	 24V dc nominal 10-28.8V dc
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm²) - 22 AWG (0.25mm²) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - Input 2 3 - Input 3 4 - Common 5 - Common 6 - User Supply 7 - User Supply
Mass	1.12 oz/31.75 grams
Publication Installation Instructions	 1734-IN052B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Input off-to-on filter time is the time from a valid input signal to recognition by the module. Input on-to-off time is the time from a valid input signal to recognition by the module.

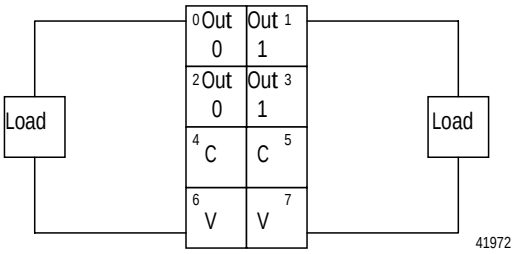
2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-OB2E Module



C = Common V = Supply

Wiring



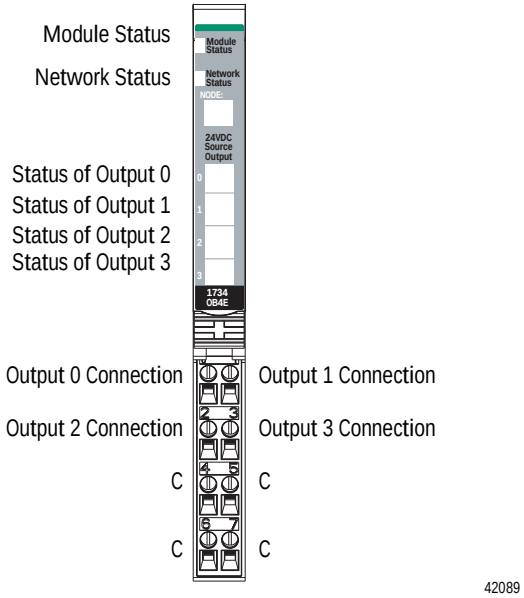
V = 12/24V dc, C = Common
Field power is supplied from the internal power bus
Module power is supplied from the internal power bus

Specifications - 1734-OB2E	
Output Specifications	
Number of Outputs	2 (1 group of 2) sourcing
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max
ON-State Voltage Drop	0.2V dc max
ON-State Current	1.0mA min per channel
OFF-State Voltage	28.8V dc max
OFF-State Leakage	0.5mA max
Output Signal Delay[1] OFF to ON ON to OFF	 0.1ms max 0.1ms max
Output Current Rating	Max 1.0A per output 2.0 max per module
Surge Current	2A for 10ms, repeatable every 3 seconds
Indicators (field side indication, logic driven)	2 yellow output status; 2 red output fault 2 green/red module/network status
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA max @ 5V dc
Power Dissipation	0.8W max @ 28.8V dc
Thermal Dissipation	2.7 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
External dc Power Supply Voltage Voltage Range Supply Current	 24V dc nominal 10 to 28.8V dc 8mA
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - Output 0 3 - Output 1 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	1.15 oz/32.60 grams
Publication Installation Instructions	 1734-IN056B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

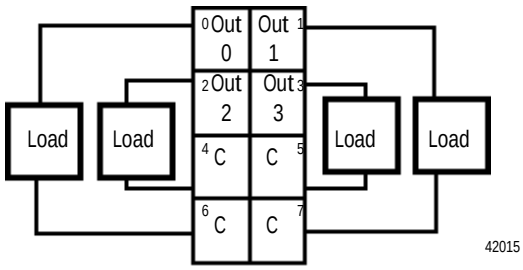
2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-OB4E Module



C = CommonV = Supply

Wiring



V = 12/24V dc, C = Common
Field power is supplied from the internal power bus
Module power is supplied from the internal power bus

Specifications - 1734-OB4E	
Output Specifications	
Number of Outputs	4 (1 group of 4) sourcing
ON-State Voltage Range	10V dc min 24V dc nominal 28.8V dc max
ON-State Voltage Drop	0.2V dc max
ON-State Current	1.0mA min per channel
OFF-State Voltage	28.8V dc max
OFF-State Leakage	0.5mA max
Output Signal Delay[1] OFF to ON ON to OFF	 0.1ms max 0.1ms max
Output Current Rating	Max 1.0A per output 2.0 max per module
Surge Current	2A for 10ms, repeatable every 3 seconds
Indicators (field side indication, logic driven)	4 yellow output status; 4 red output fault 2 green/red module/network status
Keyswitch Position	1
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA max @ 5V dc
Power Dissipation	1.2W max @ 28.8V dc
Thermal Dissipation	4.1 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac
External dc Power Supply Voltage Voltage Range Supply Current	 24V dc nominal 10 to 28.8V dc 16mA
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55°C (-4 to +131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - Output 2 3 - Output 3 4 - Common 5 - Common 6 - Common 7 - Common
Mass	1.17 oz/33.17 grams
Publication Installation Instructions	 1734-IN056B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

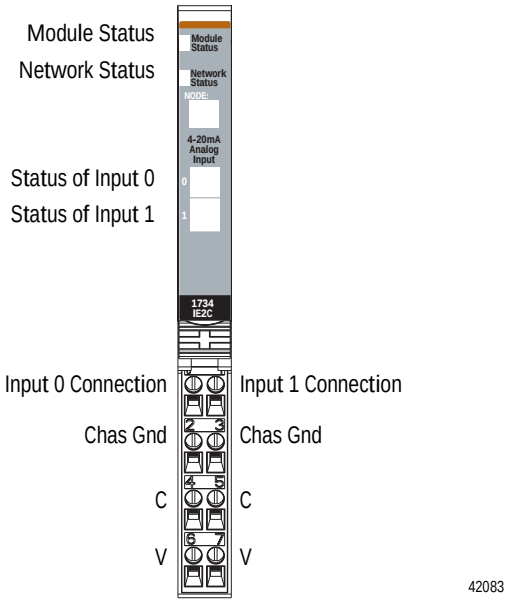
1 Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Use the following table to determine which analog module will meet your application needs.

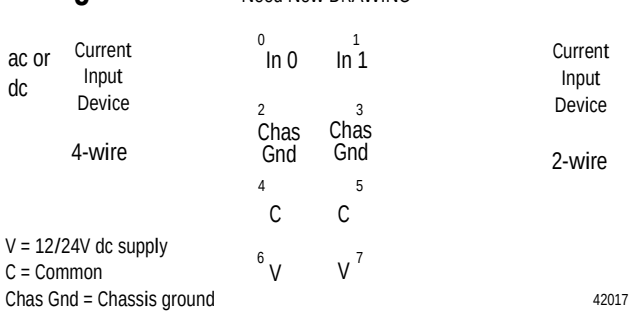
Analog Module	Purpose	See Page
1734-IE2C/B	24V dc Analog 2 Current Input Module (Cat. No. 1734-IE2C/B)	40
1734-OE2C/B	24Vdc Analog 2 Current Output Module (Cat. No. 1734-OE2C/B)	41

1734-IE2C/B Module



Chas Gnd = Chassis Ground
C = Common V = Supply

Wiring

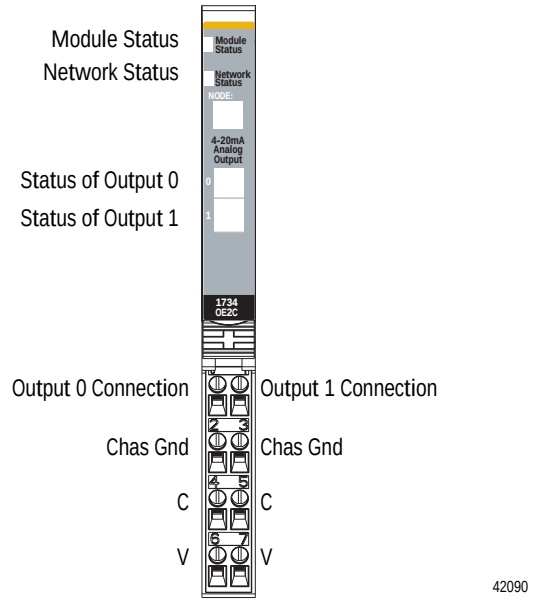


Specifications - 1734-IE2C	
Input Specifications	
Number of Inputs	2 single-ended, non-isolated
Resolution	16 bits - over 21mA 0.32µA/cnt
Input Current Terminal	4-20mA 0-20mA
Absolute Accuracy[1] Current Terminal	0.1% Full Scale @ 25ºC
Accuracy Drift w/Temp. Current Terminal	30ppm/ºC
Input Update Rate (per Module)	50ms @ Notch = 60Hz (default) 100ms @ Notch = 50Hz 24ms @ Notch = 250Hz 12ms @ Notch = 500Hz
Step Response (per Channel)	70ms @ Notch = 60Hz (default) 80ms @ Notch = 50Hz 16ms @ Notch = 250Hz 8ms @ Notch = 500Hz
Input Impedance	60Ω
Conversion Type	Delta Sigma
Common Mode Rejection Ration	120dB
Normal Mode Rejection Ratio	-60dB -3db Notch filter 15.7Hz @ Notch = 60Hz 13.1Hz @ Notch = 50Hz 65.5Hz @ Notch = 250Hz 131Hz @ Notch = 500Hz
Data Format	Signed integer
Maximum Overload	Fault protected to 28.8V dc
Calibration	Factory calibrated
Indicators	1 green/red network status, logic side 1 green/red module status, logic side 2 green/red input status, logic side
Keyswitch Position	3
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA @ 5V dc
Power Dissipation	0.6W max @ 28.8V dc
Thermal Dissipation	2.0 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac No isolation between individual channels
External dc Power Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc 10mA @ 24V dc
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55ºC (-4 to +131ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75ºC or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Input 0 1 - Input 1 2 - Ground 3 - Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	1.22 oz/34.59 grams
Publication Installation Instructions	 1734-IN053B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

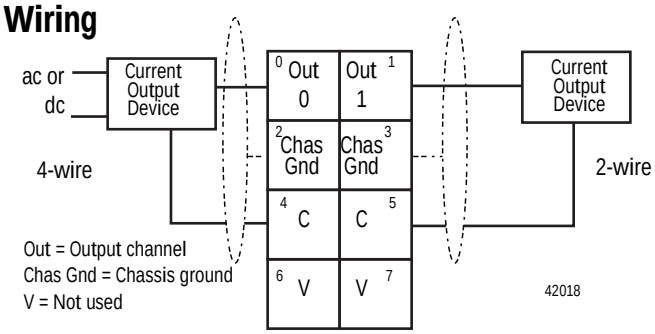
1 Includes offset, gain, non-linearity and repeatability error terms.

2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

1734-0E2C/B Module



Wiring



Specifications - 1734-OE2C	
Output Specifications	
Number of Outputs	2 single-ended, non-isolated
Resolution Current	13 bits over 0-21mA 513µA/cnt
Output Current Terminal	0mA output until communication is established 4-20mA user configurable 0-20mA user configurable
Absolute Accuracy[1] Current Terminal	0.1% Full Scale @ 25ºC
Accuracy Drift w/Temp. Current Terminal	30ppm/ºC
Step Response to 63% of FS	24µs
Resistive Load on mA Output	0-330Ω
Conversion Type	Digital to analog converter
Conversion Rate	16µs
Data Format	Signed integer
Calibration	Factory calibrated
Indicators	1 green/red network status, logic side 1 green/red module status, logic side 2 green/red output status, logic side
Keyswitch Position	4
General Specifications	
Module Location	1734-TB, -TBS, TB3, or -TB3S wiring base assembly
Pointbus Current	75mA max @ 5V dc
Power Dissipation	Max 1.0W max @ 28.8V dc
Thermal Dissipation	3.4 BTU/hr max @ 28.8V dc
Isolation Voltage	1250V rms/V ac tested at 2200V for 1s No isolation between individual channels
External dc Power Supply Voltage Voltage Range Supply Current	 24V dc nominal 10-28.8V dc (includes 5% ac ripple) 50mA @ 24V dc (including outputs @ 20mA)
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55ºC (-4 to +131ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75ºC or higher 3/64 inch (1.2mm) insulation maximum 2[1]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Output 0 1 - Output 1 2 - Ground 3 - Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	1.26 oz/35.72 grams
Publication Installation Instructions	 1734-IN054C-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

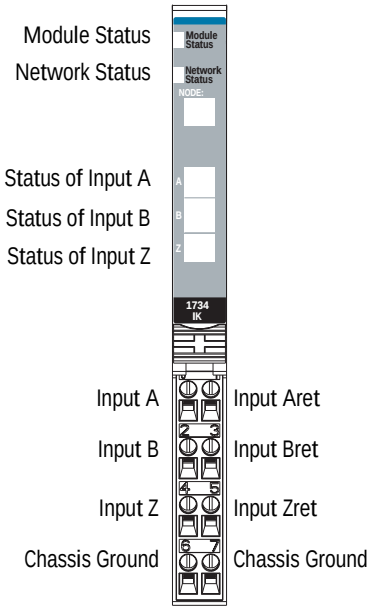
1 Includes offset, gain, non-linearity and repeatability error terms.

2 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

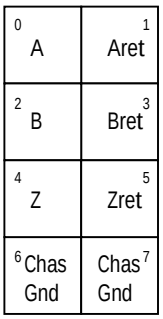
Use the following table to determine which counter module will meet your application needs.

Counter Module	Purpose	See Page
1734-IK	24V Encoder/Counter Module (Cat. No. 1734-IK)	43
1734-IJ	5V Encoder/Counter Module (Cat. No. 1734-IJ)	44
1734-VHSC24	24V dc Very High Speed Counter Module (Cat. No. 1734-VHSC24)	45
1734-VHSC5	5V dc Very High Speed Counter Module (Cat. No. 1734-VHSC5)	47

1734-IK Module



Wiring



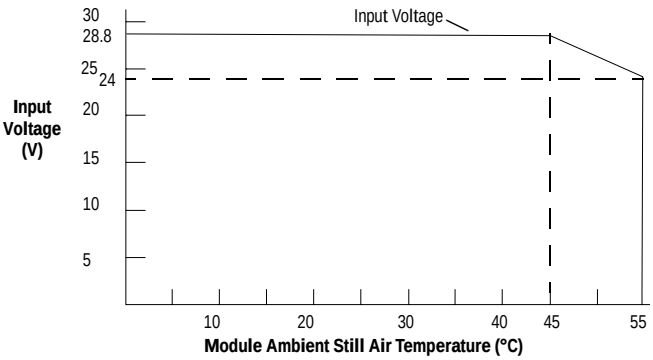
A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground

Specifications - 1734-IK Encoder/Counter Module	
Input Specifications	
Number of Inputs	1 - 1 group of A/Areturn, B/Breturn and Z/Zreturn
Input Voltage	15-24V dc
Input Current	6.1mA @ 15V dc 10.2mA @ 24V dc
Input OFF-State Current	≤0.250mA max
Input OFF-State Voltage	≤1.8V dc)
Input ON-State Current	≥5mA
Input ON-State Voltage	≥12.5V dc
Maximum ON-State Voltage	Refer to Input Derating Curve to the right
Input Filter Selections (per A/B/Z group)	Off 10µs 100µs 1.0ms 10.0ms
Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)

General Specifications	
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly
Keyswitch Position	2
Pointbus Current	160mA maximum
Power Dissipation	1.5W maximum @ rated load
Thermal Dissipation	5.1 BTU/hr maximum @ rated load
Isolation Voltage (minimum)	Prequalified at 1250V ac/rms between: System side Chassis ground A/B/Z inputs
External dc Power	No additional external power required to power module.
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	Module 1 0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Chassis ground 7 - Chassis ground
Mass	1.15 oz/32.60 grams
Publications Installation Instructions User Manual	 1734-IN006A-EN-P 1734-UM006A-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

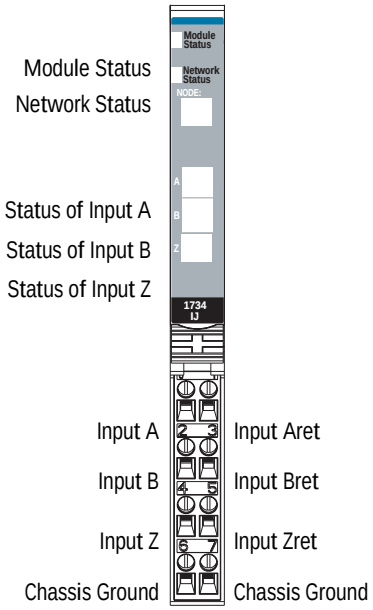
1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines.".

Input Derating Curve

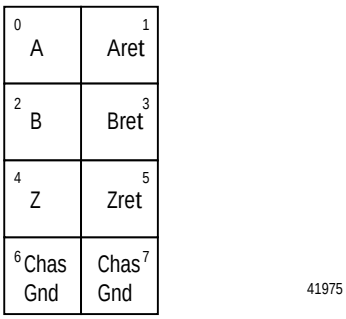


Note: Exceeding the maximum input voltage can cause permanent damage to the input.

1734-IJ Module



Wiring

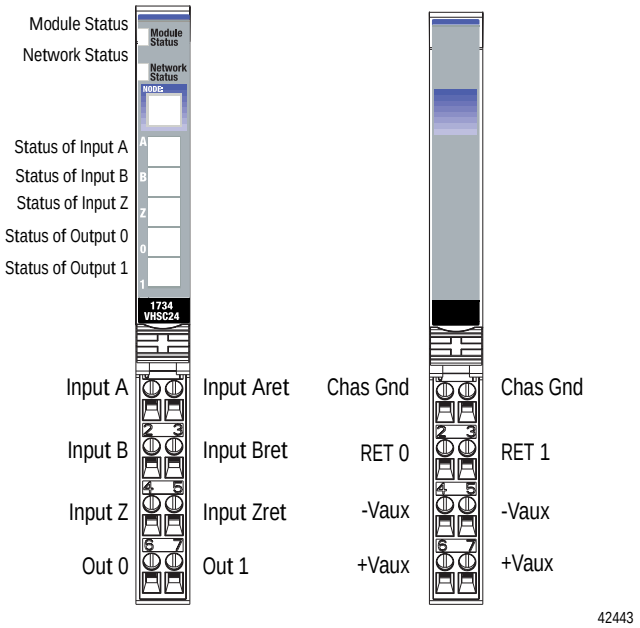


A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground

Specifications - 1734-IJ Encoder/Counter Module	
Input Specifications	
Number of Inputs	1 - 1 group of A/Areturn, B/Breturn and Z/Zreturn
Input Voltage	5V
Input Current	19.1mA @ 5V dc 25.7mA @ 6V dc
Input OFF-State Current	≤0.250mA max
Input OFF-State Voltage	≤1.25V dc)
Input ON-State Current	≥5mA
Input ON-State Voltage	≥2.6V dc
Maximum ON-State Voltage	±6V
Input Filter Selections (per A/B/Z group)	Off 10µs 100µs 1.0ms 10.0ms
Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)
General Specifications	
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly
Keyswitch Position	2
Pointbus Current	160mA maximum
Power Dissipation	1.1W maximum @ rated load
Thermal Dissipation	3.75 BTU/hr maximum @ rated load
Isolation Voltage (minimum)	Prequalified at 1250V ac/rms between: System side Chassis ground A/B/Z inputs
External dc Power	No additional external power required to power module.
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	Module 1 0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Chassis ground 7 - Chassis ground
Mass	1.15 oz/32.60 grams
Publications Installation Instructions User Manual	 1734-IN005A-EN-P 1734-UM006A-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines.".

1734-VHSC24 Module



Wiring

Module 1		Module 2	
0 A	1 Aret	0 Chas Gnd	1 Chas Gnd
2 B	3 Bret	2 RET 0	3 RET 1
4 Z	5 Zret	4 -Vaux	5 -Vaux
6 Out 0	7 Out 1	6 +Vaux	7 +Vaux

42444

A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground
-Vaux = Auxiliary Supply
+Vaux = Auxiliary Supply

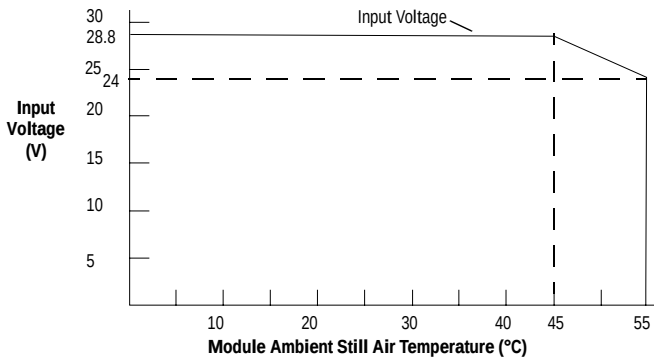
Specifications - 1734-VHSC24 Very High Speed Counter Module	
Input Specifications	
Number of Inputs	1 - 1 group of A/Areturn, B/Breturn and Z/Zreturn
Input Voltage	15-24V dc
Input Current	6.1mA @ 15V dc 10.2mA @ 24V dc
Input OFF-State Current	≤0.250mA max
Input OFF-State Voltage	≤1.8V dc
Input ON-State Current	≥5mA
Input ON-State Voltage	≥12.5V dc
Maximum ON-State Voltage	Refer to derating curve on page 46.
Input Filter Selections	Off 10µs 100µs 1.0ms 10.0ms
Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)
Output Specifications	
Number of Outputs	1 isolated group of 2 capable of 0.5A @ 24V dc
Output Control	Outputs can be tied to any of 4 compare windows
Output Supply Voltage Range	10-28.8V dc
OFF-State Leakage Current	≤0.5mA
ON-State Voltage Drop	≤0.3V dc @ 0.5A
ON-State Current	0.5A maximum
Short Circuit Current	6A - Outputs are short circuit protected and either cycle until the fault is corrected, or latch off (depending upon programming) Short circuit detected when output is turned on.
Open Wire Detection	Open wire detected when output is turned off
Delay Time OFF to ON ON to OFF	 25µs (load dependent) 150µs (load dependent)

General Specifications	
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly
Keyswitch Position	2
Pointbus Current	180mA maximum
Power Dissipation	1.9W maximum @ rated load
Thermal Dissipation	6.5 BTU/hr maximum @ rated load
Isolation Voltage (minimum)	Prequalified for 1250V ac/rms between: **Module 1** System side (PointBus) Chassis ground A/B/Z inputs O0/O1 and user power supply **Module 2** System side Chassis ground Vaux + User power supply common
External dc Power (does not represent power required to supply outputs)	No additional external power required to power module
Field Power Bus	24V dc nominal; range 10-28.8V dc
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	Module 1 0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Output 0 7 - Output 1 Module 2 0 - Chassis ground 1 - Chassis ground 2 - Return 0 3 - Return 1 4 - -V 5 - -V 6 - +V 7 - +V
Mass	1.15 oz/32.60 grams
Publications Installation Instructions User Manual	 1734-IN003B-EN-P 1734-UM003A-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Off/on delay is time from a valid output "on" signal to output energization. On/off delay is time from a valid output "off" signal to output deenergization.

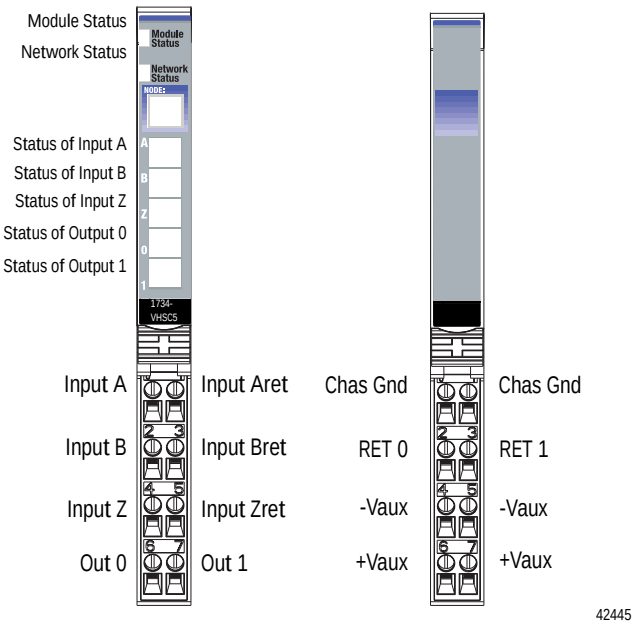
2 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines.".

Input Derating Curve



Note: Exceeding the maximum input voltage can cause permanent damage to the input.

1734-VHSC5 Module



Wiring

Module 1		Module 2	
0 A	1 Aret	0 Chas Gnd	1 Chas Gnd
2 B	3 Bret	2 RET 0	3 RET 1
4 Z	5 Zret	4 -Vaux	5 -Vaux
6 Out 0	7 Out 1	6 +Vaux	7 +Vaux

42444

A, B, Z, Aret, Bret, and Zret = inputs
Chas Gnd = Chassis Ground
-Vaux = Auxiliary Supply
+Vaux = Auxiliary Supply

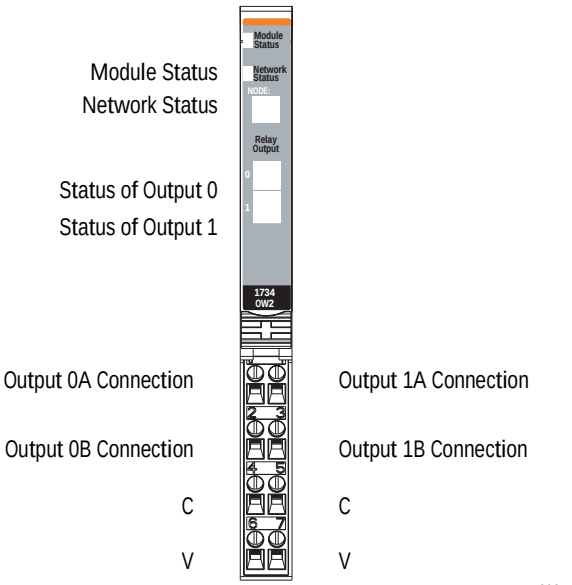
Specifications - 1734-VHSC5 Very High Speed Counter Module	
Input Specifications	
Number of Inputs	1 - 1 group of A/Areturn, B/Breturn and Z/Zreturn
Input Voltage	5V dc
Input Current	19.1mA @ 5V dc 25.7mA @ 6V dc
Input OFF-State Current	≤0.250mA max
Input OFF-State Voltage	≤1.25V dc)
Input ON-State Current	≥5mA
Input ON-State Voltage	≥2.6V dc
Maximum ON-State Voltage	±6V
Input Filter Selections	Off 10µs 100µs 1.0ms 10.0ms
Maximum Input Frequency	1.0MHz counter and encoder X1 configurations 500kHz encoder X2 configuration (no filter) 250kHz encoder X4 configuration (no filter)
Output Specifications	
Number of Outputs	1 isolated group of 2 capable of 0.5A @ 24V dc
Output Control	Outputs can be tied to any of 4 compare windows
Output Supply Voltage Range	10-28.8V dc
OFF-State Leakage Current	≤0.5mA
ON-State Voltage Drop	≤0.3V dc @ 0.5A
ON-State Current	0.5A maximum
Short Circuit Current	6A - Outputs are short circuit protected and either cycle until the fault is corrected, or latch off (depending upon programming) Short circuit detected when output is turned on.
Open Wire Detection	Open wire detected when output is turned off
Delay Time OFF to ON ON to OFF	 25µs (load dependent) 150µs (load dependent)

General Specifications	
Module Location	1734-TB, -TBS, -TB3, -TB3S wiring base assembly
Keyswitch Position	2
Pointbus Current	180mA maximum
Power Dissipation	1.5W maximum @ rated load
Thermal Dissipation	5.1 BTU/hr maximum @ rated load
Isolation Voltage (minimum)	Prequalified at 1250V ac/rms between: **Module 1** System side Chassis ground A/B/Z inputs O0/O1 and user power supply **Module 2** System side Chassis ground Vaux + User power supply common
External dc Power (does not represent power required for outputs)	No additional external power required to power module.
Field Power Bus	24V dc nominal; range 10-28.8V dc
Dimensions Inches (Millimeters)	2.21H x 0.47W x 2.97L (56.0H x 12.0W x 75.5L)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to 55°C (-4 to 131°F) -40 to 85°C (-40 to 185°F) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	Module 1 0 - A 1 - Aret 2 - B 3 - Bret 4 - Z 5 - Zret 6 - Output 0 7 - Output 1 Module 2 0 - Chassis ground 1 - Chassis ground 2 - Return 0 3 - Return 1 4 - -V 5 - -V 6 - +V 7 - +V
Mass	1.15 oz/32.60 grams
Publications Installation Instructions User Manual	 1734-IN004B-EN-P 1734-UM003A-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE C DeviceNet

1 Off/on delay is time from a valid output “on” signal to output energization. On/off delay is time from a valid output “off” signal to output deenergization.

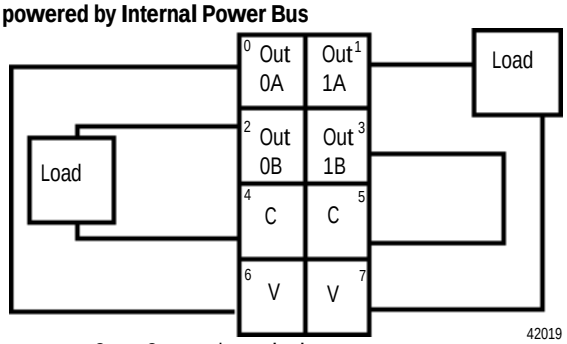
2 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, “Industrial Automation Wiring and Grounding Guidelines.”.

1734-OW2 Module



Load power can be obtained from a variety of sources, and can range from +5V dc to 240V ac, depending on relay load.

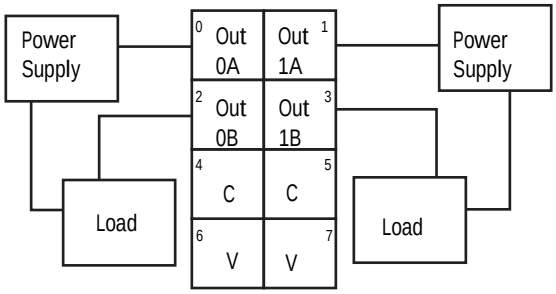
Load powered by Internal Power Bus



Out = Output channel relay contacts
V = Supply (can range from +5V dc to 240V ac)
C = Common

IMPORTANT Relay contacts are <u>not</u> connected to the internal power bus.

Load powered by External Power Bus

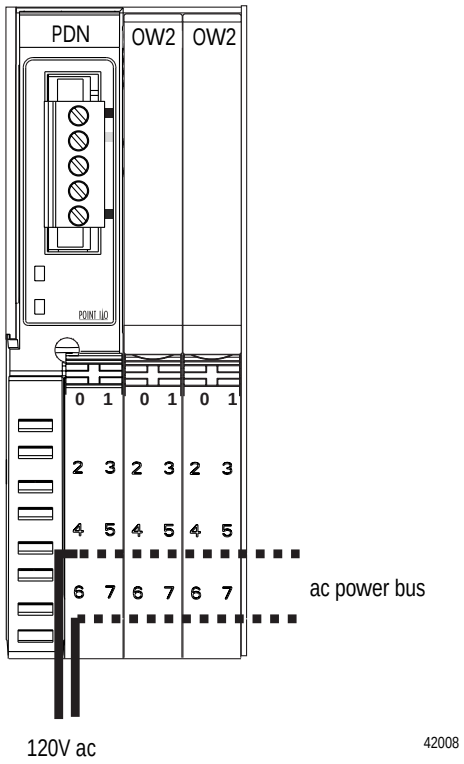


Out = Output channel relay contacts
V = Supply (can range from +5V dc to 240V ac)
C = Common

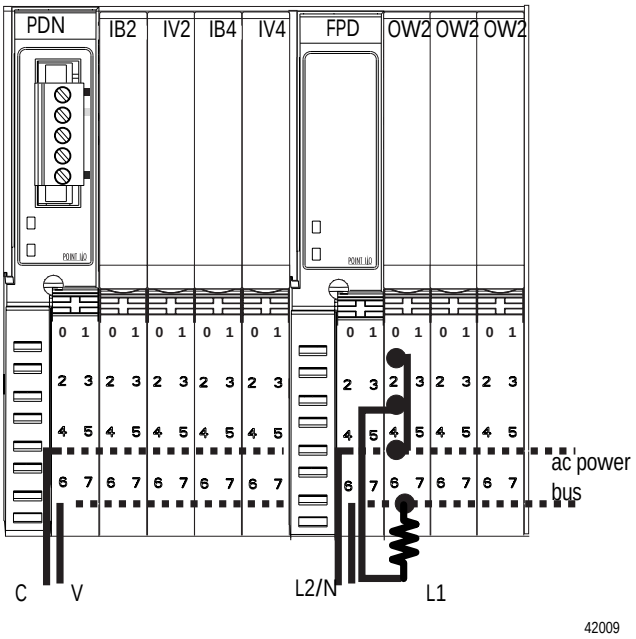
ATTENTION

- Do not attempt to increase load current or wattage capability beyond the maximum rating by connecting 2 or more outputs in parallel. The slightest variation in relay switching time may cause one relay to momentarily switch the total load current.
- Make certain that all relay wiring is properly connected before applying any power to the module.
- Total current draw through the wiring base unit is limited to 10A. Separate power connections to the terminal base unit may be necessary.
- Use the end cap from your adapter or interface module to cover the exposed interconnections on the last mounting base on the DIN rail. Failure to do so could result in equipment damage or injury from electric shock.

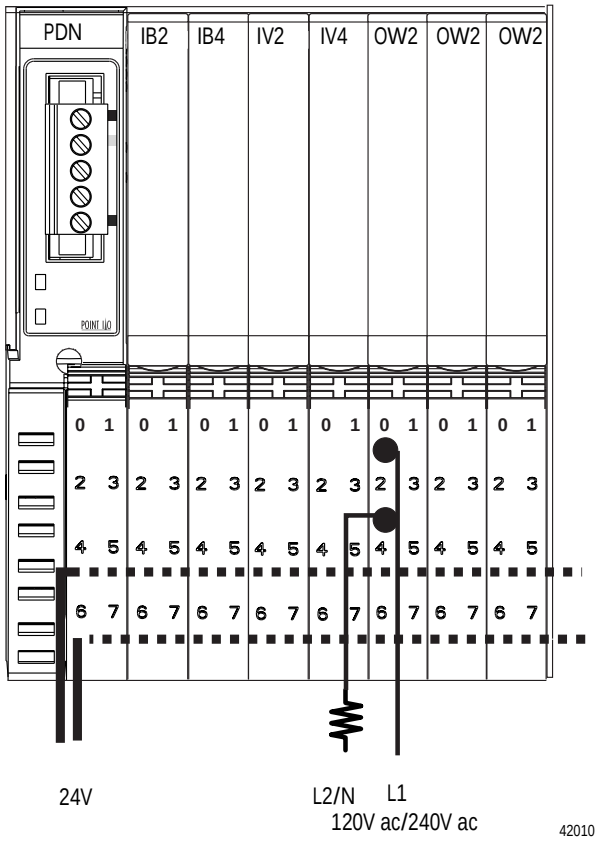
Wiring with AC Modules Only



Wiring Using a 1734-FPD to Create a New AC Power Bus



Wiring Using External Power Source for AC Relay Power



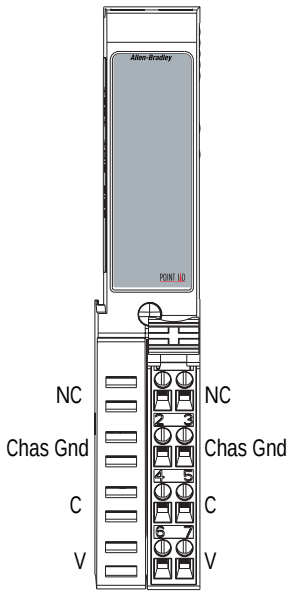
Specifications - 1734-OW2	
Outputs per Module	2 Form A isolated (normally open) electromechanical relays
Off-State Leakage Current (max at 240V ac)	1.2mA and bleed resistor thru snubber circuit
Output Voltage Range (load dependent)	5-28.8V dc @ 2.0A resistive 48V dc @ 0.5A resistive 125V dc @ 0.25A resistive 125V ac @ 2.0A resistive 240V ac @ 2.0A resistive
Output Current Rating (at rated power)	Resistive 2A @ 5-28.8V dc 0.5A @ 48V dc 0.25A @ 125V dc 2A @ 125V ac 2A @ 240V ac Inductive 2.0A steady state @ 5-28.8V dc, L/R = 7ms 0.5A steady state @ 48V dc, L/R = 7ms 0.25A steady state @ 125V dc, L/R = 7ms 2.0A steady state, 15A make @ 125V ac, PF = cos θ = 0.4 2.0A steady state, 15A make @ 240V ac, PF = cos θ = 0.4

Specifications - 1734-OW2 (Continued)	
Power Rating (steady state)	250W max. for 125V ac resistive output 480W max. for 240V ac resistive output 60W max. for 28.8V dc resistive output 24W max. for 48V dc resistive output 31W max. for 125V dc resistive output 250VA max. for 125V ac inductive output 480VA max. for 240V ac inductive output 60VA max. for 28.8V dc inductive output 24VA max. for 48V dc inductive output 31VA max. for 125V dc inductive output
Output Signal Delay OFF to ON ON to OFF	 10ms maximum (time from valid output on signal to relay energization by module) 26ms maximum (time from valid output off signal to relay deenergization by module)
Initial Contact Resistance	30mΩ
Switching Frequency	1 operation/3s (0.3Hz at rated load) max
Operate/Release Time	10ms max
Bounce Time	1.2ms (mean)
Minimum Contact Load	100µA at 100mV dc
Expected Life of Electrical Contacts	Minimum 100,000 operations @ rated loads
Fusing	Module outputs are not fused. If fusing is desired, you must supply external fusing.
Indicators	2 green/red module/network status 2 yellow output status
Keyswitch Position	7

General Specifications	
Module Location	1734-TB or -TBS wiring base assembly
Pointbus Current	80mA max @ 5V dc
Power Dissipation	0.5W max
Thermal Dissipation	1.7 BTU/hr max
Isolation Voltage Between any 2 sets of contacts Customer load to logic	 2550V dc for 1s 2550V dc for 1s
Field Power Bus Supply Voltage Voltage Range Supply Current	 None required 240V ac max 2A per channel maximum, 4A per module
Dimensions HxWxL	56.0mm x 12.0mm x 75.5mm (2.21in x 0.47in x 2.97in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55ºC (-4 to +131ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 12g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - Output 0A 1 - Output 1A 2 - Output 0B 3 - Output 1B 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	1.30 oz/36.86 grams
Publication Installation Instructions	 1734-IN055B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

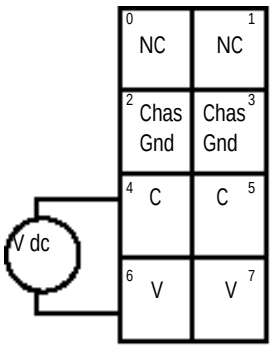
1734-FPD Field Power Distributor



NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = Supply

Wiring

12/24V dc



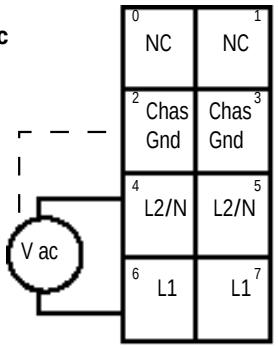
This supply will be connected to the internal power bus.

NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = 12/24V dc

Connect	Terminal
+V dc	6
-V dc	4
Chas Gnd	2
12/24V dc becomes the internal power bus for modules to the right.	

Wiring

120/240V ac



This supply will be connected to the internal power bus.

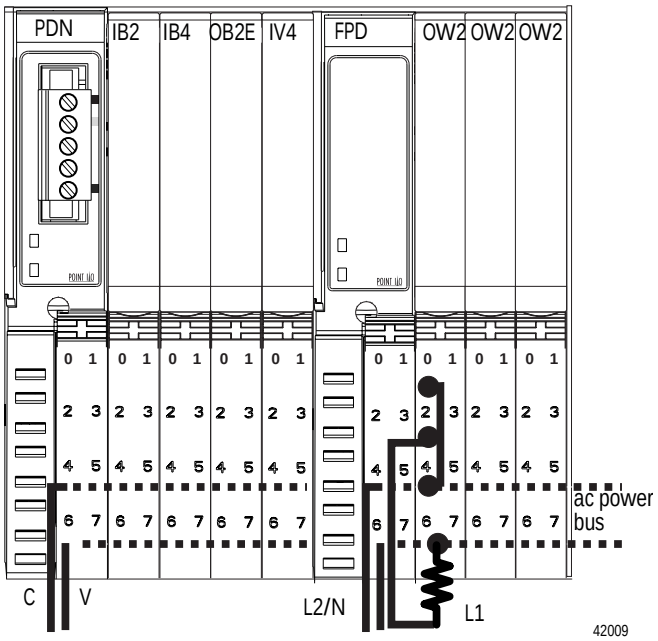
NC = No Connection
C = Common
Chas Gnd = Chassis Ground
V = 12/24V dc

Connect	Terminal
L1	6
L2/N	4
Chas Gnd	2
120/240V ac becomes the internal power bus for modules to the right.	

Specifications - 1734-FPD	
Input Voltage Rating	12V dc, 24V dc nominal 10-28.8V dc range 120V ac, 240V ac nominal
Input Current	10A maximum
Indicators	None
Module Location	Between I/O modules in 1734 system Breaks power bus
General Specifications	
Pointbus Current	Pass through
Power Consumption	None
Power Dissipation	None
Thermal Dissipation	None
Isolation Voltage	1528V rms/V ac
Field Power Bus Supply Voltage Supply Current	 264V ac maximum, 12V dc, 24V dc, 10-28.8V dc range 120V ac, 240V ac 50/60 Hz 10A maximum
Dimensions HxWxL	76.2mm x 25.4mm x 133.4mm (3.00in x 1.00in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +55ºC (-4 to +131ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 12g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 2g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6Nm)
Field Wiring Terminations	0 - No Connection 1 - No Connection 2 - Chassis Ground 3 - Chassis Ground 4 - Common 5 - Common 6 - Supply 7 - Supply
Mass	4.38 oz/124.17 grams
Publication Installation Instructions	 1734-IN059B-EN-P
Agency Certification	LISTED c UL us Class I, Division 2 Groups A, B, C, and D certified CE DeviceNet

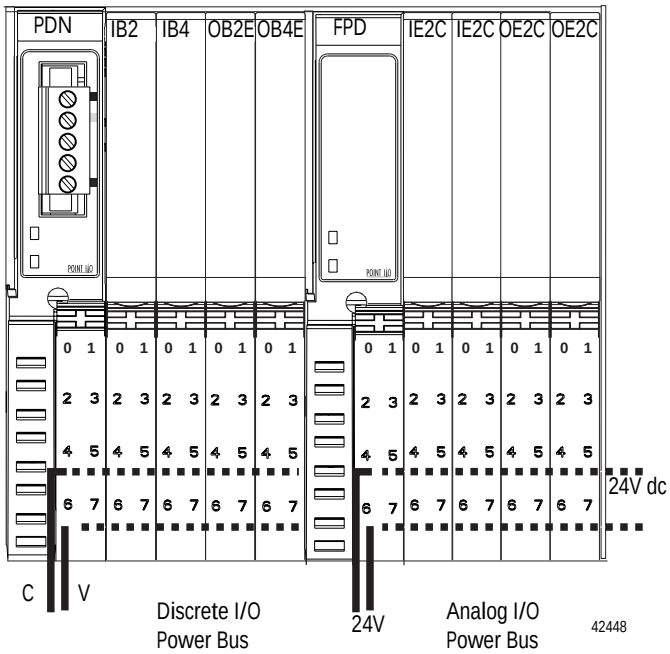
1 Use this conductor category information for planning conductor routing. Refer to publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Wiring Using a 1734-FPD to Create a New AC Power Bus



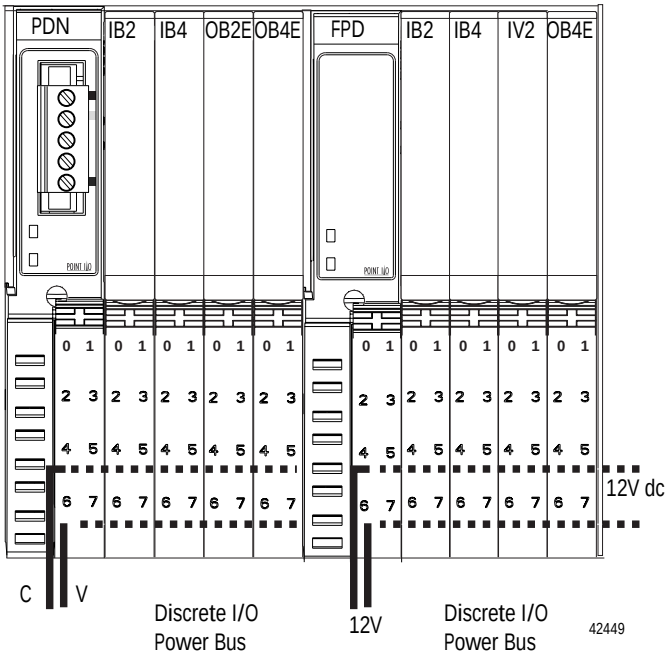
Wiring Using a 1734-FPD to Create a New Analog Power Bus

This configuration isolates noisy discrete I/O power from sensitive analog I/O power.

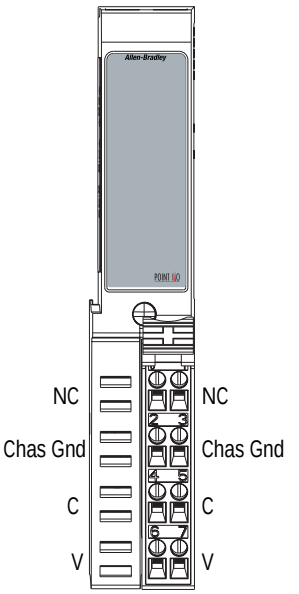


Wiring Using a 1734-FPD to Create a New DC Power Bus

This configuration changes power bus voltage for 12/24V dc systems.



1734-EP24DC Expansion Power Supply



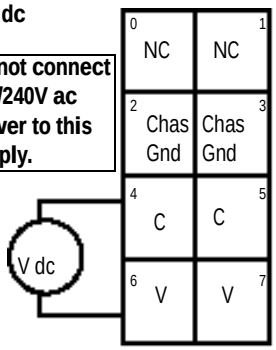
42450

NC = No ConnectionChas Gnd = Chassis Ground
C = CommonV = Supply

Wiring

12/24V dc

Do not connect 120/240V ac power to this supply.



This dc supply will be connected to the internal power bus.

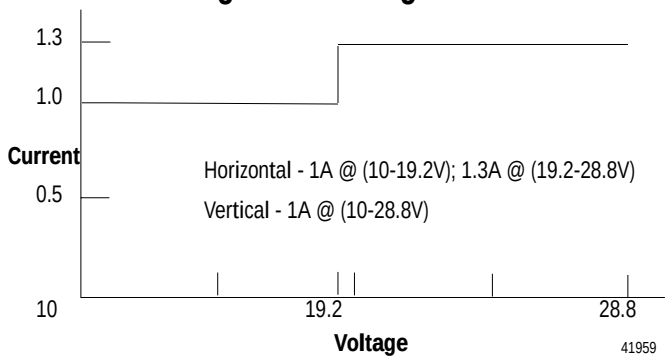
V = 12/24V dc, C = Common
CHAS GND = Chassis ground

30880

Specifications - 1734-EP24DC	
I/O Module Capacity	12 modules
Power Supply	**Note:** In order to comply with CE Low Voltage Directives (LVD), you must use a Safety Extra Low Voltage (SELV) or a Protected Extra Low Voltage (PELV) power supply to power this adapter.
Input Voltage Rating	24V dc nominal 10-28.8V dc range
Field Side Power Requirements	24V dc (+20% = 28.8V dc maximum) @ 400mA maximum
Inrush Current	6A maximum for 10ms
Indicators	1 green field power status indicator 1 green 5V system power indicator
POINTBus Output Current	Horizontal mounting - 1A @ 10-19.2V input 1.3A @ 19.2-28.8V in Vertical mounting - 1A @ 10-28.8V input
Input Overvoltage Protection	Reverse polarity protected
Interruption	Output voltage will stay within specifications when input drops out for 10ms at 10V with maximum load.
Module Location	Between I/O modules in 1734 system Breaks field power bus
Limitations	Use with POINT I/O adapters only
General Specifications	
Power Consumption	9.8W maximum @ 28.8V dc
Power Dissipation	3.0W maximum @ 28.8V dc
Thermal Dissipation	10.0 BTU/hr maximum @ 28.8V dc
Isolation Voltage	1250V rms/V ac
Field Power Bus Supply Voltage Supply Current	 12V dc, 24V dc, 10-28.8V dc range 10A maximum
Dimensions HxWxL	76.2mm x 25.4mm x 133.4mm (3.00in x 1.00in x 5.25in)
Environmental Conditions Operational Temperature Storage Temperature Relative Humidity Shock Operating Non-operating Vibration	 -20 to +85ºC (-4 to +185ºF) -40 to 85ºC (-40 to 185ºF) 5 to 95% noncondensing 30g peak acceleration, 11(±1)ms pulse width 50g peak acceleration, 11(±1)ms pulse width Tested 5g @ 10-500Hz per IEC 68-2-6
Conductors Wire Size Category	14 AWG (2.5mm^2) - 22 AWG (0.25mm^2) solid or stranded wire rated at 75°C or higher 3/64 inch (1.2mm) insulation maximum 2[2]
Terminal Base Screw Torque	7 pound-inches (0.6 Nm)
Field Wiring Terminations	0 - No Connection 1 - No Connection 2 - Chassis Ground 3 - Chassis Ground 4 - Common 5 - Common 6 - Supply Voltage 7 - Supply Voltage
Mass	4.38 oz/12.42 grams
Publications Installation Instructions	 1734-IN058A-EN-P
Agency Certification (when product is marked)	c UL us Class I Division 2 certified Groups A, B, C, D certified CE C-Tick

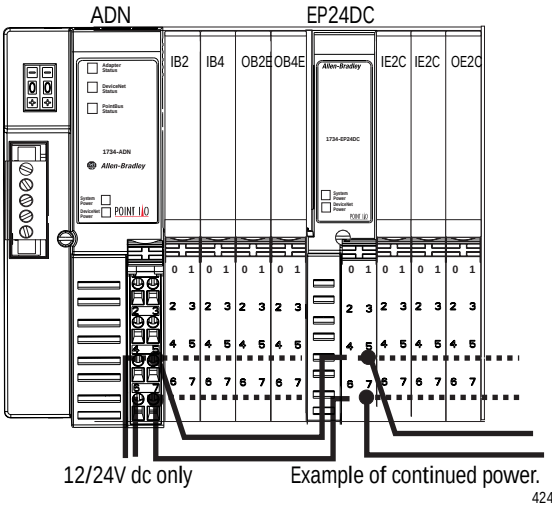
1 Use this conductor category information for planning conductor routing as described in publication 1770-4.1, "Industrial Automation Wiring and Grounding Guidelines."

Current Derating for Mounting

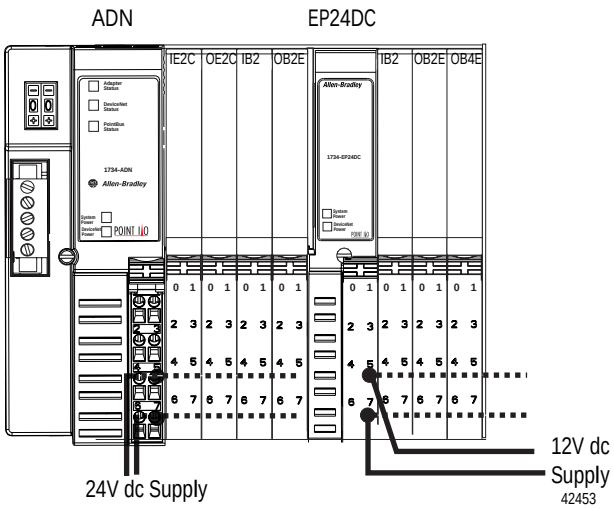


41959

Example of Continuing Power

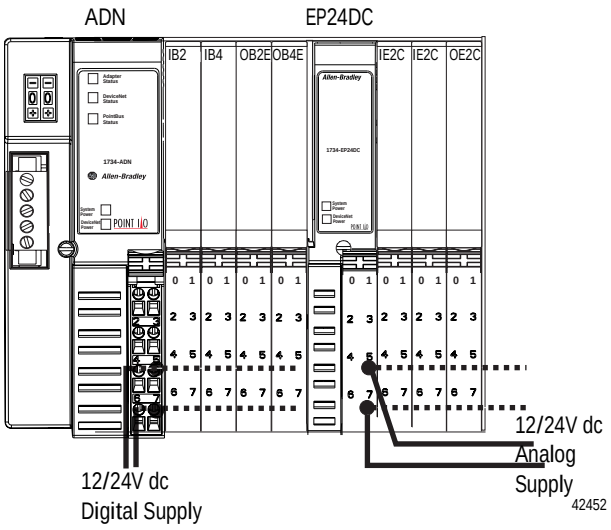


Example of Logical Partitioning



IMPORTANT The EP24DC expansion power supply can **only** be used with POINT I/O adapters.

Example of Functional Partitioning

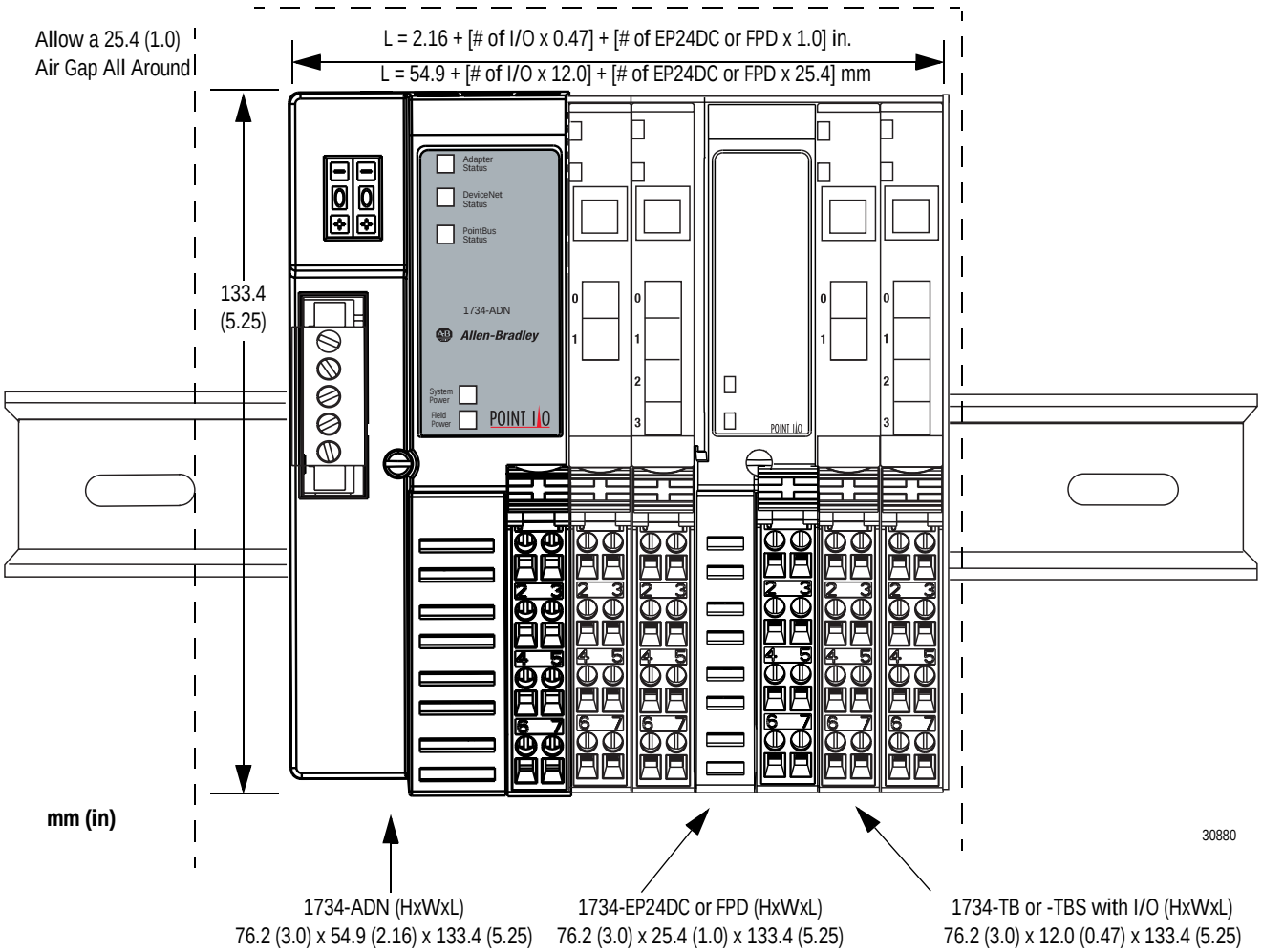


Related Publications

For electronic copies of these publications, go to:
http://www.theautomationbookstore.com

Catalog Number	Description	Related Publications	
Communication Adapter	DeviceNet Adapter (Cat. No. 1734-ADN)	Installation Instructions	1734-IN007A-EN-P
Communication Interface	DeviceNet Interface (Cat. No. 1734-PDN)	Installation Instructions	1734-IN057B-EN-P
1734D Series	1734D Series 24V dc 8 In/8 Out Combo Module (Cat. No. 1734D-IB8XOB8E, -IB8XOB8ES)	Installation Instructions	1734-5.20
	1734D Series 24V dc 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IB8XOW8, -IB8XOW8S)	Installation Instructions	1734-5.21
	1734D Series 120V ac 8 In/8 Out Combo Module (Cat. No. 1734D-IA8XOA8, -IA8XOA8S)	Installation Instructions	1734-5.22
	1734D Series 120V ac 8 In/8 N.O. Relay Combo Module (Cat. No. 1734D-IA8XOW8, -IA8XOW8S)	Installation Instructions	1734-5.23
Wiring Base Assemblies	Wiring Base Assembly with 8 Screw-Clamp or Spring-Clamp Removable Terminal Blocks (Cat Nos. 1734-TB, -TBS)	Installation Instructions	1734-IN511A-EN-P
	Wiring Base Assembly with 12 Screw-Clamp or Spring-Clamp Removable Terminal Blocks (Cat Nos. 1734-TB3, -TB3S)	Installation Instructions	1734-IN013A-EN-P
AC Modules	120V ac 2 Input Module (Cat. No. 1734-IA2)	Installation Instructions	1734-IN010A-EN-P
	120/220V ac 2 Output Module (Cat. No. 1734-OA2)	Installation Instructions	1734-IN009A-EN-P
	220V ac 2 Input Module (Cat. No. 1734-IM2)	Installation Instructions	1734-IN008A-EN-P
DC Modules	24V dc 2 Input Sink Module (Cat. No. 1734-IB2)	Installation Instructions	1734-IN051B-EN-P
	24V dc 4 Input Sink Module (Cat. No. 1734-IB4)	Installation Instructions	1734-IN051B-EN-P
	24V dc 2 Input Source Module (Cat. No. 1734-IV2)	Installation Instructions	1734-IN052B-EN-P
	24V dc 4 Input Source Module (Cat. No. 1734-IV4)	Installation Instructions	1734-IN052B-EN-P
	24V dc Electronically Protected 2 Point Output Module (Cat. No. 1734-OB2E)	Installation Instructions	1734-IN056B-EN-P
	24V dc Electronically Protected 4 Point Output Module (Cat. No. 1734-0B4E)	Installation Instructions	1734-IN056B-EN-P
Analog Modules	24V dc Analog 2 Current Input Module (Cat. No. 1734-IE2C/B)	Installation Instructions	1734-IN053C-EN-P
	24Vdc Analog 2 Current Output Module (Cat. No. 1734-OE2C/B)	Installation Instructions	1734-IN054C-EN-P
Counter Modules	24V Encoder/Counter Module (Cat. No. 1734-IK)	Installation Instructions User Manual	1734-IN006A-EN-P 1734-UM006A-EN-P
	5V Encoder/Counter Module (Cat. No. 1734-IJ)	Installation Instructions User Manual	1734-IN005A-EN-P 1734-UM006A-EN-P
	24V dc Very High Speed Counter Module (Cat. No. 1734-VHSC24)	Installation Instructions User Manual	1734-IN003B-EN-P 1734-UM003A-EN-P
	5V dc Very High Speed Counter Module (Cat. No. 1734-VHSC5)	Installation Instructions User Manual	1734-IN004A-EN-P 1734-UM003A-EN-P
Relay Module	24V dc, 120V ac, and 240V ac 2 Relay Sink/Source Output Module (Cat. No. 1734-OW2)	Installation Instructions	1734-IN055B-EN-P
Field Power Distributor	Field Power Distributor (Cat. No. 1734-FPD)	Installation Instructions	1734-IN059B-EN-P
Expansion Power Supply	24V dc Expansion Power Supply (Cat. No. 1734-EP24DC)	Installation Instructions	1734-IN058A-EN-P

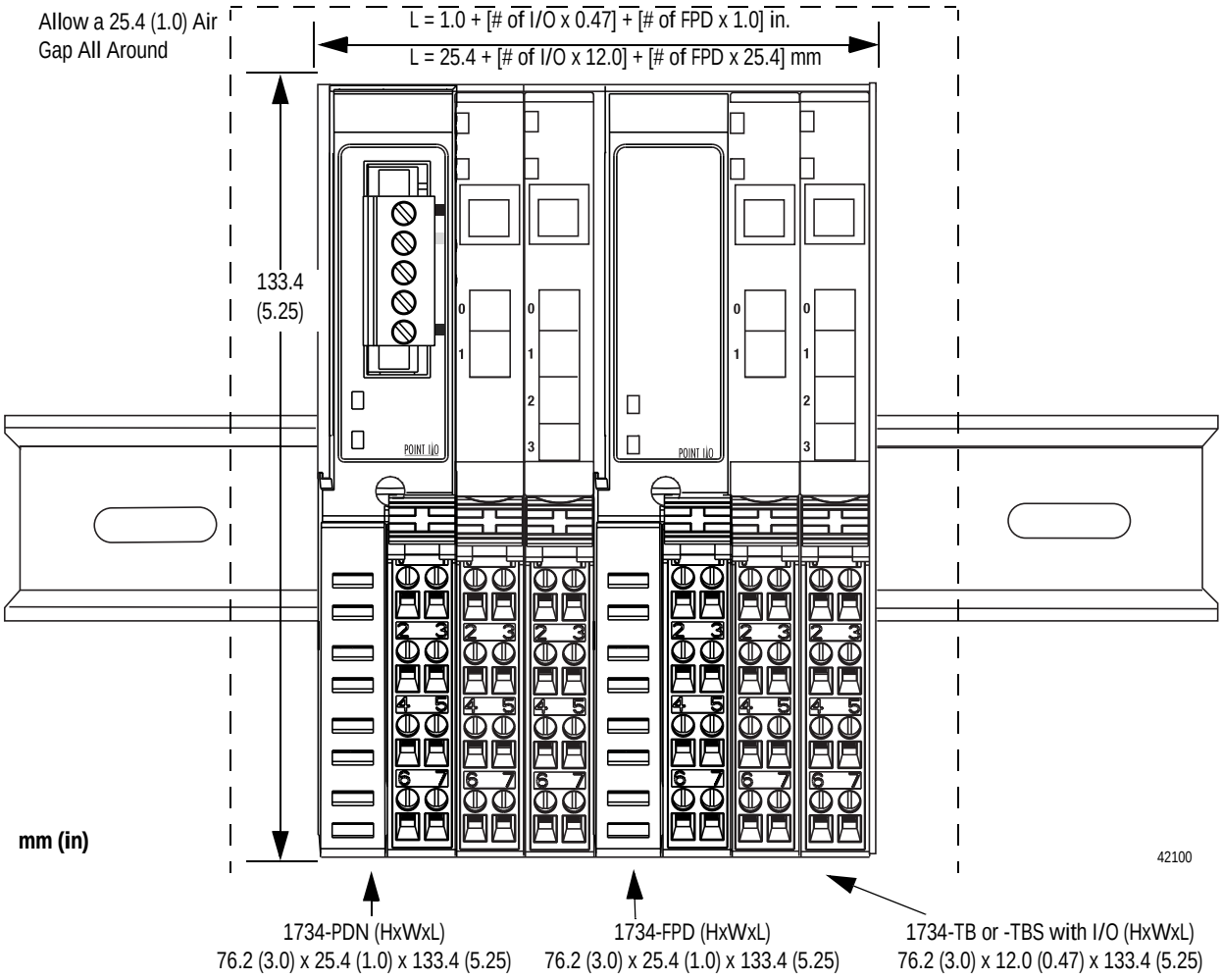
POINT I/O with a 1734-ADN Mounting Dimensions


Allow a 25.4 (1.0)
Air Gap All Around
L = 2.16 + [# of I/O x 0.47] + [# of EP24DC or FPD x 1.0] in.
L = 54.9 + [# of I/O x 12.0] + [# of EP24DC or FPD x 25.4] mm
133.4
(5.25)
Adapter Status
DeviceNet Status
PointBus Status
1734-ADN
Allen-Bradley
System Power
Field Power
POINT I/O
mm (in)
30880
1734-ADN (HxWxL)
76.2 (3.0) x 54.9 (2.16) x 133.4 (5.25)
1734-EP24DC or FPD (HxWxL)
76.2 (3.0) x 25.4 (1.0) x 133.4 (5.25)
1734-TB or -TBS with I/O (HxWxL)
76.2 (3.0) x 12.0 (0.47) x 133.4 (5.25)

ATTENTION

POINT I/O is designed to be grounded through the DIN rail to chassis ground. To assure proper grounding of POINT I/O adapters and terminal bases to chassis ground, the recommended DIN rail material is zinc-plated, yellow-chromated steel. Mount POINT I/O adapters and terminal bases only to zinc-plated, yellow-chromated steel.

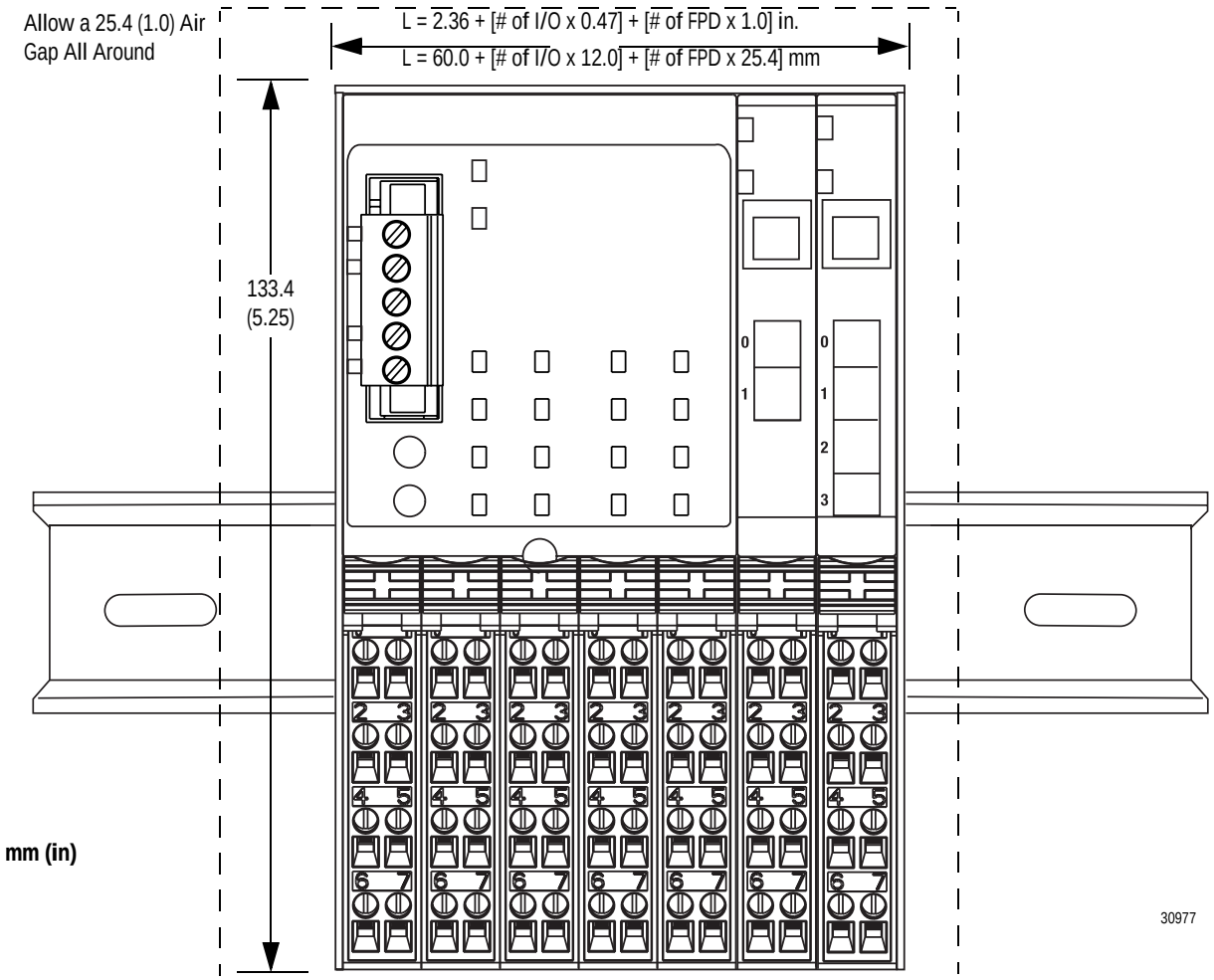
POINT I/O with a 1734-PDN Mounting Dimensions



ATTENTION

POINT I/O is designed to be grounded through the DIN rail to chassis ground. To assure proper grounding of POINT I/O adapters and terminal bases to chassis ground, the recommended DIN rail material is zinc-plated, yellow-chromated steel. Mount POINT I/O adapters and terminal bases only to zinc-plated, yellow-chromated steel.

1734D Mounting Dimensions



1734D (HxWxL)
76.2 (3.0) x 60.0 (2.36) x 133.4 (5.25)

ATTENTION

POINT I/O is designed to be grounded through the DIN rail to chassis ground. To assure proper grounding of POINT I/O adapters and terminal bases to chassis ground, the recommended DIN rail material is zinc-plated, yellow-chromated steel. Mount POINT I/O adapters and terminal bases only to zinc-plated, yellow-chromated steel.

POINT I/O Marker Card

A marker card is available under catalog number 1492-SM5X5. Each kit contains five 5x5 cards with 100 markers per card.

Support Services

At Allen-Bradley, customer service means experienced representatives at Customer Support Centers in key cities throughout the world for sales, service, and support. Our value-added services include:

Technical Support

- SupportPlus programs
- Telephone support and 24-hour emergency hotline
- Software and documentation updates
- Technical subscription services

Engineering and Field Services

- Application engineering assistance
- Integration and start-up assistance
- Field service
- Maintenance support

Technical Training

- Lecture and lab courses
- Self-paced computer and video-based training
- Job aids and workstations
- Training needs analysis

Repair and Exchange Services

- Your only “authorized” source
- Current revisions and enhancements
- Worldwide exchange inventory
- Local support

POINT I/O, PointBus, and RSNetWorx are trademarks of Rockwell Automation.
DeviceNet is a trademark of Open DeviceNet Vendor Association (O.D.V.A.).

Reach us now at www.rockwellautomation.com

Wherever you need us, Rockwell Automation brings together leading brands in industrial automation including Allen-Bradley controls, Reliance Electric power transmission products, Dodge mechanical power transmission components, and Rockwell Software. Rockwell Automation's unique, flexible approach to helping customers achieve a competitive advantage is supported by thousands of authorized partners, distributors and system integrators around the world.

Americas Headquarters, 1201 South Second Street, Milwaukee, WI 53204, USA, Tel: (1) 414 382-2000, Fax: (1) 414 382-4444
European Headquarters SA/NV, avenue Herrmann Debroux, 46, 1160 Brussels, Belgium, Tel: (32) 2 663 06 00, Fax: (32) 2 663 06 40
Asia Pacific Headquarters, 27/F Citicorp Centre, 18 Whitfield Road, Causeway Bay, Hong Kong, Tel: (852) 2887 4788, Fax: (852) 2508 1846

Publication 1734-TD002B-EN-P - January 2001

Supersedes Publication 1734-TD002A-EN-P - July 2000

© 2001 Rockwell International Corporation. Printed in the U.S.A.